



TRANE®



Systems Guide

*Equipment, controls and services
for integrated HVAC-R solutions
in commercial and industrial markets*



Providing you the information you need to research and design the heating, ventilating and air conditioning systems that best meet your customer needs.



Building Applications



Get more information to help you during those important planning and concept stages. Our technical expertise and knowledge of different building types for specific markets can help you ensure that initial specifications get off to the right start.

Equipment and Controls



Access the information you need during the design stage. Our wide-ranging equipment and controls selection offer solutions to help you meet your customer needs.

Services



Learn how services can help HVAC systems run with maximum efficiency throughout a building's lifecycle.

Sustainable Solutions



Access key information on advanced, energy-efficient HVAC systems and technologies that deliver long-term on quality and sustainability, and can represent significant savings.

HVAC Product Selection Tool



The site features a dedicated HVAC Product Selection Tool that helps specifying engineers and consultants to quickly and easily select the equipment to complete their HVAC system designs. System selections can be added to a personalized shortlist that can be e-mailed along with key technical information.



visit engineer.trane.com

Content

HVAC Systems



HVAC Systems

Chillers

Air-cooled chillers, water-cooled chillers,
heat rejection devices



Chillers

Heat Pumps

Air-to-water reversible heat pumps,
water-to-water heat pumps



Heat Pumps

Multi-pipe Units



Multi-pipe Units

Airside Products

Air handling units, water terminals



Airside Products

DX Unitary Systems

Rooftops, condensing units,
close control units



DX Unitary
Systems

Controls



Controls

Building Services



Building Services

What's New from Trane



UniTrane™ Harmony fan coils



Breathing silence



UniTrane™ Harmony fan coil units are available as both **cabinet** and **concealed** versions, AC and EC fan motor models, from 0.9 to 6.5 kW with a wide array of options and accessories.

They reach sound power levels as low as 30 dBA!

The result is an **extremely configurable** product delivering the optimum combination of performance, acoustic comfort and operating costs.

Installation is simplified as no ductwork or ceiling modification is needed and there is no need for wall thermostat wiring.

RTHD evo water-cooled screw chillers



High efficiency chillers for high performance buildings

A concentrate of Trane expertise in **water-cooled screw chillers** and leading **control** technology for a **superior customer experience**.

Trane offers four efficiency levels including a High Seasonal Efficiency (HSE) version equipped with a **Trane Adaptive Frequency Drive**.

Combined TD7 color touchscreen and Tracer™ UC800 intelligence drive system reliability and interoperability, reduced energy consumption and intuitive interaction with your chiller.

- Industry leading EER and ESEER
- Superior versatility – suits comfort cooling and precision process temperature control
- Optimized Total Cost of Ownership
- Legendary Trane reliability!





Sintesis RTAF air-cooled screw chillers

SINTEsis

The best bundled in one. Our best.



Trane has combined the best **efficiency and performance in one system**. Trane Sintesis provides leading temperature control in the most demanding applications. **Trane Sintesis is simply the best synthesis of:**

- Energy Efficient - Four efficiency levels to meets the needs of your building, your climate and your budget.
- Quiet - Three levels of noise attenuation with no compromise in operational efficiency.
- Reliable - At Trane we manufacture and design the core components and put our systems through extremely demanding performance and reliability tests.
- Smart - It has the capability to provide all-year cooling in ambients from -18°C up to 55°C. It is ideally suited to industrial applications and is Ecodesign 2016 compliant. Operation could not be easier thanks to smart controls and a user-friendly touchscreen interface. Connectivity with Modbus, BACnet®, LonTalk® and Trane BMS is simple with the Smart Com interface.

Multi-pipe units - CMAA air-cooled scroll units - RTMA air-cooled screw units

Simultaneous heating and cooling with one product

The continuous drive to **improve energy efficiency** of building systems requires an optimal balancing in the demand and supply of both heating and cooling. In many buildings, simultaneous heating in some spaces and cooling in other spaces is needed. Continuously changing heating/cooling demand over the day is due to internal heat loads from people and IT equipment, seasonal weather and changing sun exposure.

Trane's sustainable solution: A new concept called **multi-pipe units**, designed to **simultaneously deliver hot and chilled water**.

- Heating and cooling capacity control – Simultaneously from 0 to 100%
- Sustainability – Very high total seasonal efficiencies
- Unlike traditional reversible heat pumps, multi-pipe units have two separate heat exchangers: one for chilled and one for hot water production

Multi-pipe units are suitable for many applications, particularly in countries with mild winters or in buildings where the heating system is designed for hot water inlet temperatures of 35-60°C.



What's New from Trane (continued)

Conquest CGAX/CXAX scroll chillers and heat pumps

CONQUEST

Conquering customers' hearts



Your primary concern when selecting HVAC equipment for your building should be comfort, efficiency and economy. Trane Conquest chillers and heat pumps uniquely combine **the best in performance** with the **best in value**.

- Energy Efficient – Optimized for part load operation since units always modulate throughout their real life utilization. Heat pump CXAX is fully Ecodesign 2015 and 2017 compliant in heating mode.
- Quiet – A choice of two levels of noise attenuation with no compromise in operational efficiency.
- Reliable – At Trane we manufacture and design the core components and put our systems through extremely demanding performance and reliability tests.
- Smart – Despite increased efficiency, the footprint has been reduced by 20% versus previous generation and the majority of the sizes are 1.5 m high to fit even the tiniest jobs. It has the capability to provide all-year cooling in ambients from -18°C up to 46°C and all-year heating down to -15°C.

Stealth™ RTAE air-cooled screw chillers

So much efficiency.... so little sound

Trane Stealth™ air-cooled chillers with **AdaptiSpeed™ Technology** deliver an industry-leading combination of part-load and full-load efficiencies, while offering multiple sound reduction options for noise-sensitive installations. No other air-cooled chiller delivers this kind of efficiency or acoustic performance ... making the Stealth chiller the perfect solution for your building.

Three levels of **InvisiSound™ acoustic reduction treatments** are available to give you the flexibility to meet specific application needs.

The Tracer™ UC800 provides the intelligence behind the Stealth chiller and features Adaptive Control™ algorithms: proprietary control strategies that respond to a variety of conditions to maintain efficient chiller plant operation.



eCTV CVHH/CDHH centrifugal chillers

The future is now



Trane's Series E chiller uses a next **generation low pressure olefin** refrigerant, the industry's highest efficiency HFO refrigerant.

Building on the CenTraVac chiller legacy, the Series E chiller delivers the same **industry leading reliability** and the **highest efficiencies** that customers expect from Trane chillers. ECTV is at least 13.5 percent more efficient than any other centrifugal chiller design!

With **integrated energy-saving options** this chiller can pay for itself through:

- Reduced heating plant consumption
- Reduced water consumption
- Reduced ancillary power
- Simplified system control
- Lower total operating costs

TVR™

A smart solution for every building

The new variable refrigerant TVR™ energy efficient air conditioning concept is a **modular HVAC system** designed to provide the ideal climate in offices, retail establishments, hotels, luxury apartments, and villas. It is equally suited to new construction and retrofit projects.

Energy efficient: The TVR™ system's automatic power consumption adjustment matches the cooling load perfectly to the changing needs of all the individual zones, thus realizing energy savings.

Energy management: Capacity is controlled intelligently and distributed evenly over the different zones without wasting energy.

The optional centralized control system of TVR™ already has all the power management data or information points of each individual zone. Adding the power measurement software allows the user to calculate the individual power consumption per zone, per floor or per building.





High performance buildings

Realistic means to reach your specific building goals: energy, financials, sustainability or occupant satisfaction

Over the lifecycle of your building, you could substantially strengthen your bottom line through reduced energy bills and improved operational efficiencies. High performance buildings will help you, the building owner:

- Maximize the value and ROI of your property.
- Take advantage of Trane knowledge and expertise to achieve operational advances.
- Utilize smart and sustainable energy resources to lower variable costs.
- Reduce your building's carbon footprint.
- Increase the productivity and satisfaction of the lives in your building.

Trane will work with you through every step of the process, reaching your goals, helping to eliminate inefficiency and increasing your ROI for the life of your building. High performance buildings assessments offer diverse benefits to building owners, depending on whether you are restoring and modernizing an older building or taking a proactive approach to operating and maintaining a newer structure.

The best performing buildings are designed for efficiency from the ground up. The processes and systems that keep a building functioning are interrelated, and one process affects others. That's why it's critical to have a higher level of knowledge, training and experience on every system – not just one or two – when designing a sustainable building environment.

We base our recommendations on a deep understanding of your priorities and other big-picture factors – your strategic objectives, maintenance philosophy, environmental consciousness and the level of control you want over your building's systems.

Our services professionals and engineers use an assessment-based approach resulting in customized and outcome-based solutions in designing and delivering these services.

We share information, knowledge and industry leading practices to help businesses achieve high performance, sustainable building systems and practices that generate energy, financial and operational efficiencies and reduce the impact to the environment.

A few of Trane's high performance building references



The world's first international carbon neutral convention centre

Convention Centre Dublin (Dublin, Ireland)

Trane systems and services

- Highly-efficient heating and chilled-water system
- Ice storage thermal unit to shift electricity demand from more expensive on-peak rates to off-peak
- 33 thermal heat wheels in the air handling units - recover 80 percent of the energy from exhaust air for reuse in the building

Results

- Reduction of cooling costs by an estimated 17 percent
-



Newspaper publisher and printer

Nice-Matin (Nice, France)

Trane systems and services

- Innovative system upgrades
- Ongoing Trane Select maintenance contract
- Replaced outdated systems with high-efficiency chilled water system
 - Six dry coolers
 - Seven new air handling units
- Improved system reliability
- Building automation system controls HVAC & enables remote access to the heating plant, 40 air handling units and a cooling system for the information technology (IT) room

Results

- Decreased electricity costs by 15 percent
- Significantly reduced water consumption by 2 million m³
- Improved employee comfort
- Increased color printing capabilities



Razor manufacturing, packaging and warehousing facility

Gillette (Łódź, Poland)

Trane systems and services

- Trace™ 700 energy modeling software
- Energy saving infrastructure upgrades
 - Better capacity control
 - Critical system reliability
 - Extension of free cooling feature
- Comprehensive, high efficiency solution with variable flow drives/dry coolers
- Continuous service and maintenance agreement

Results

- Global energy usage reduced by 50 percent at operational sites

Proven performance to make buildings work better

Businesses around the world are being challenged to improve energy efficiency. According to the World Business Council for Sustainable Development, buildings worldwide account for 40% of global energy consumption. Of that amount, between 45% and 65% is used by HVAC systems that keep building environments comfortable and healthy. The slightest inefficiencies in cooling and heating equipment create a huge energy drain and the financial impact is significant. Trane captures emerging technologies when designing products, and develop with energy efficiency, and low operating costs in mind, to allow building owners to manage energy better. Whether it is a chiller rated Class A in the Eurovent* certification program – or water terminals equipped with an EC fan motor – saving the customer energy costs is one of Trane's priorities.

The proof is in the testing

The testing process starts in research and development. We look at environmental performance, acoustic characteristics, operating longevity, and overall operating efficiency.

At Trane, computer selection programs predict equipment performance based on laboratory testing.

Factory performance tests confirm that the actual Trane product performance matches the predicted performance and the results serve as a benchmark during the commissioning process.

We are committed to the highest level of design and manufacturing accuracy to make sure that your products performs as expected.

Trane European testing facilities and laboratories fully comply with European Standard EN 14511, meaning that procedures, measurements and conditions are respected to provide our customers with trustable and certified performances.

After an extensive and rigorous inspection process conducted by Eurovent, Trane's test stands in Charmes, France are approved for conducting Eurovent certification tests for air-cooled chillers above 600 kW, recognizing the right to Trane to test air-cooled chillers up to 1,500 kW in his own facilities as part of the certification program.

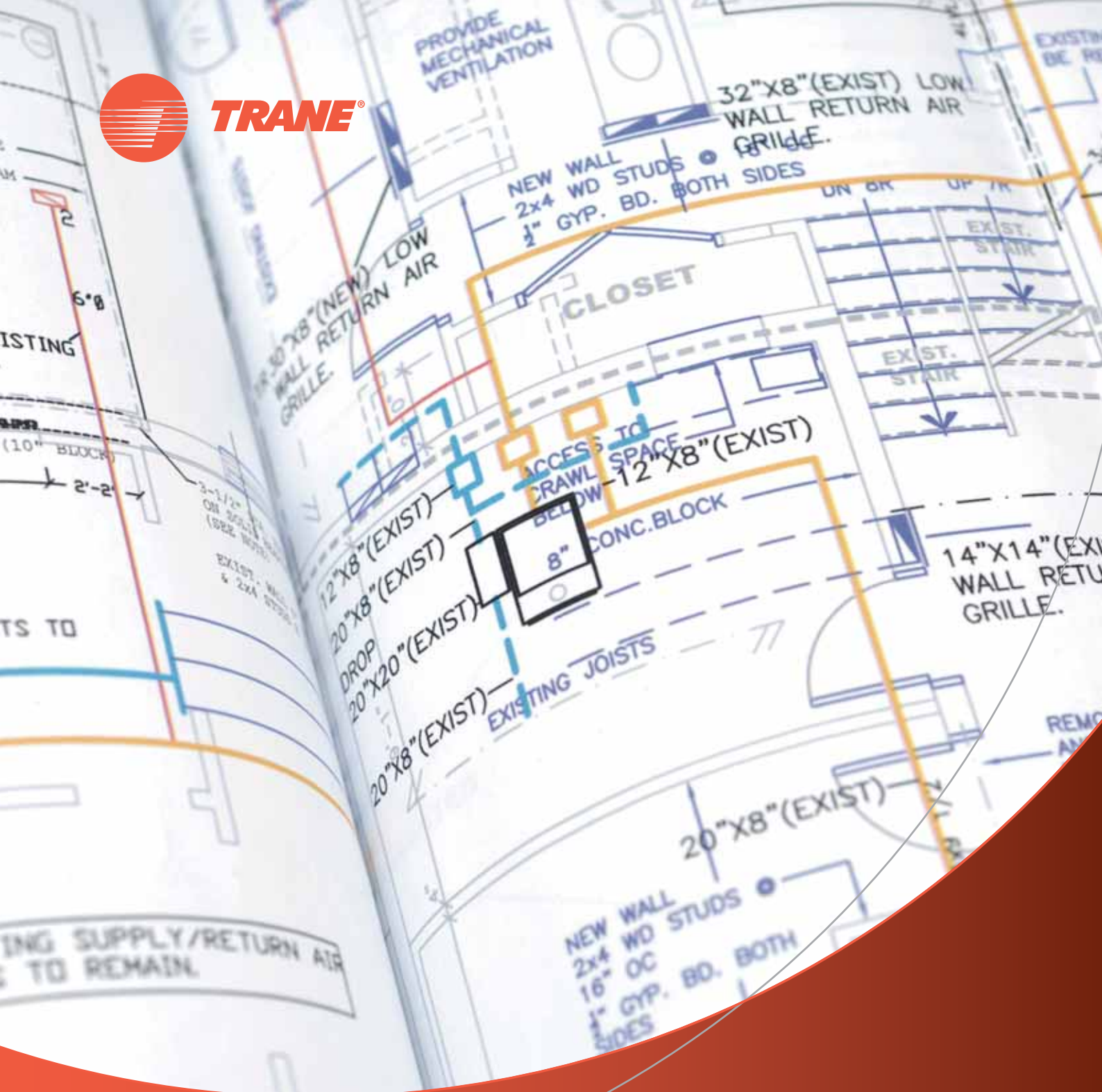
The Eurovent certification brings clarity and transparency. It also shows the Trane commitment to deliver systems with high levels of performance and reliability.



*Eurovent, the European Association of Air Handling and Refrigerating Equipment Manufacturers, certifies the performance ratings of air conditioning and refrigeration products according to European and international standards. The objective is to build customer confidence by increasing the integrity and accuracy of industrial performance ratings.



TRANE®



Trane HVAC Systems

Every building has a purpose, whether it's to nurture inventions, house masterpieces, cultivate learning or even to host birthday parties. A true high performance Heating, Ventilating and Air Conditioning (HVAC) system is one that makes your building work better for life.



Trane solutions for the lodging industry

Reaching for perfection

Maintaining a high and consistent level of comfort is critical in the lodging industry. Hotels succeed or fail based on their ability to put “heads in beds” at profitable rate levels. The prime influence on this occupancy rate is guest satisfaction. A room that is noisy, stuffy, hot or clammy creates a powerful negative impression. Trane has both experience and a portfolio of products to help operators of hotels attract and retain guests.

Trane has decades of experience working with the lodging industry, from individual hotels to global chains. Energy is the second-highest operating cost component in the lodging industry. We know that from 50 to 80 percent of the energy costs in lodging are related to HVAC system operation and have the solutions to keep your energy costs to a minimum with efficient equipment and high performance building management systems.

Trane high efficiency multipipe chillers models RTMA and CMAA provide simultaneous delivery of 0 - 100% heating and/or cooling all year round, increasing guest comfort in each hotel room, and significantly reducing energy costs.





- 1 = Chilled water plant: 2 AquaStream 3G scroll chillers with factory-mounted CH530
2 = Fresh air control: AHU with Trane factory mounted-control (UC400/UC600)
3 = Room comfort: FCU with EC fan motor and Trane factory-mounted control (ZN525/UC400)
4 = Humidity air control for gym and swimming pool: AHU with UC600
5 = Building systems operations and management: Trane Tracer ES™ and Tracer™ SC web-based solutions
6 = Access and room booking systems integration: through standard BACnet® protocol

Control systems improve comfort, simplify maintenance and optimize operation

Within your lodging facility, there are areas with varying requirements. Guest rooms, lobby areas, dining areas and recreation zones all have different environmental requirements. Food preparation areas need extensive ventilation and to be kept separate from other areas. Pools and gymnasiums also have special temperature requirements and need effective dehumidification year round. Part of the solution is quality equipment, properly sized, and correctly installed. The other part is a control system that can keep all areas operating in harmony.

A control system also makes it possible to optimize equipment operation. For example, in a chilled beams system, the primary air conditions (temperature/humidity) can be reset according to the most demanding zone.

Comfort systems and the bottom line

Trane's international organization appreciates that different regions have varying comfort needs, building codes, and engineering practices. Our vast local sales and service support teams, with their extensive local experience and customer relationships, add value to your plans. Regardless of the size or scale of your lodging business, we're ready to help.

Building operation at your fingertips

With Trane web-based BMS solutions, the overall building operation can be monitored and managed from anywhere. Alarms and events are routed to operators' smartphones and computers, wherever they sit, no matter how many users there are.



Trane solutions for retail businesses

Creating the perfect atmosphere

From simple stores to modern shopping complexes, Trane has experience in the retail business. We know that the temperature, humidity and ventilation management needs of stores are different than for other buildings.

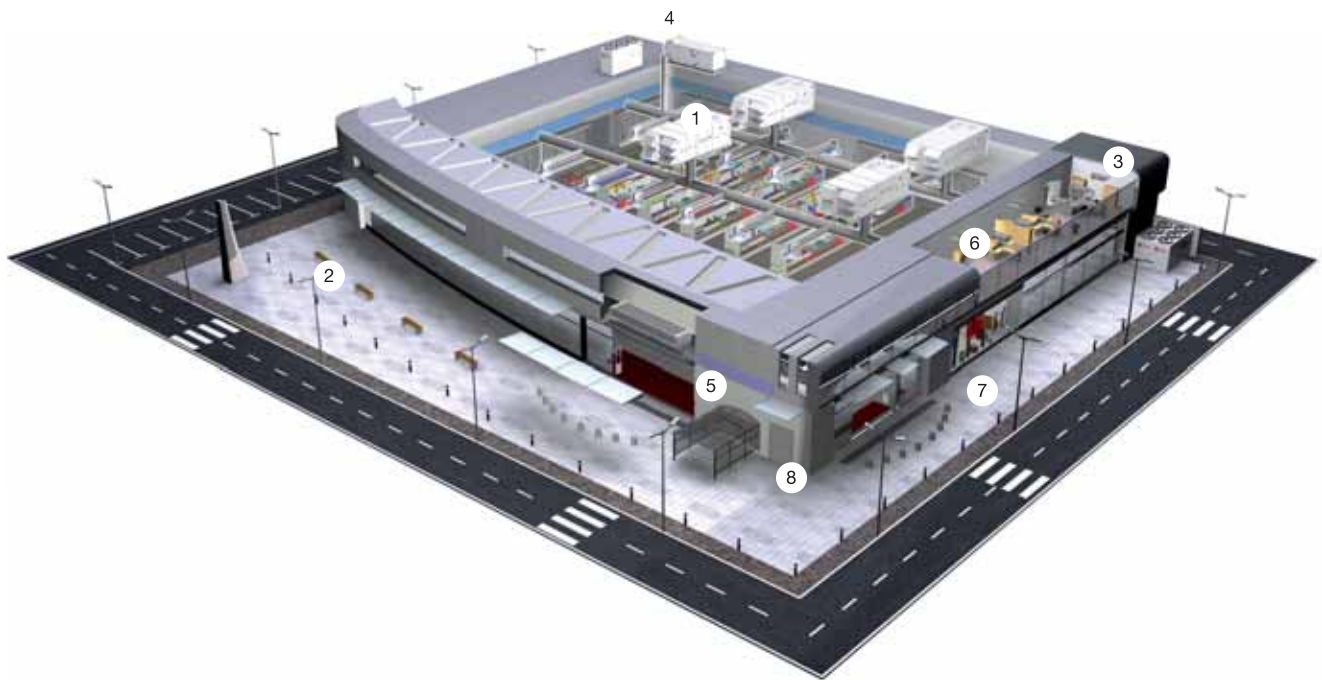
Leveraging our experience, we can help you identify specific areas for energy and comfort improvement and keep your buildings operating at their design levels. And with contingency planning and our thousands of equipment and controls technicians, we can help you reduce the risk of sales lost due to comfort system failure.

Delivered system

Trane's light commercial BMS only requires a few settings to be implemented on an application. Thanks to the capability of any Trane HVAC equipment to communicate over a network, the BMS manages to identify these equipment linked together, builds the corresponding database and automatically offers to the end user predefined functions such as time-of-day schedule, automatic setpoint reset, zone management or alarming menu, with almost no labor required.

If you want to customize your interface, convenient software is available to do this. The system is compact and convenient to install and wire up. Trane's equipment uses open standard protocols, which are often present in retail buildings.





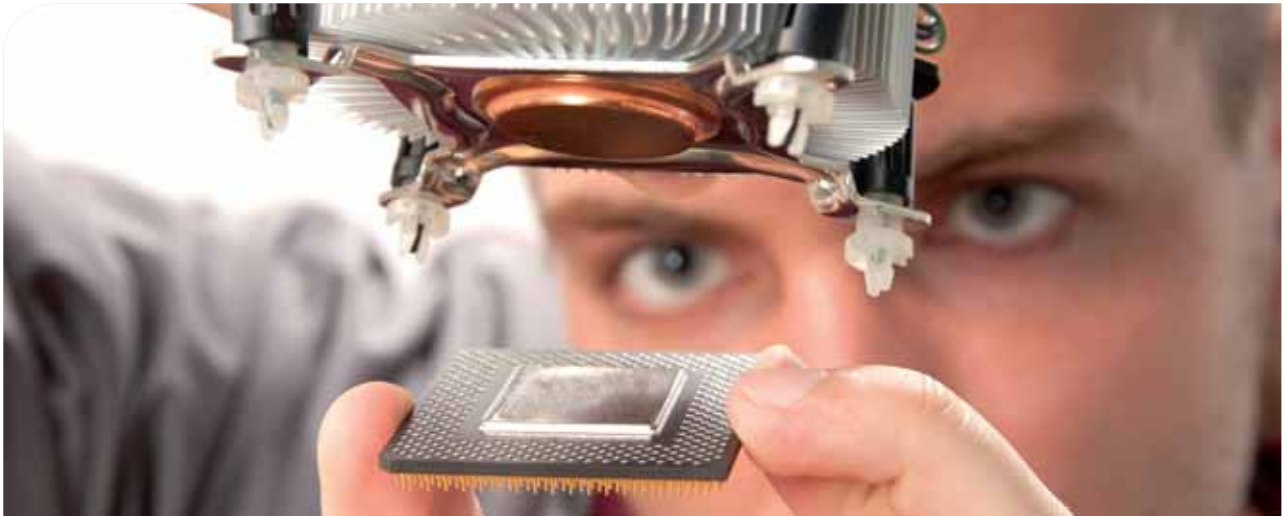
- 1 = Space temperature and humidity control: Voyager™ rooftop units with factory-mounted control: ReliaTel™
- 2 = Lighting control: either through Trane dedicated I/O controller (MP581, UC400, UC600) or by integrating a specific lighting control system through standard protocol (BACnet® to DALI as an example)
- 3 = Building systems operations and management: Trane Tracer ES™ and Tracer™ SC web-based solutions
- 4 = Cold aisle retrieval: AHU with Trane factory-mounted controls (UC600)
- 5 = Air curtains: FCU with EC fan motor and Trane factory-mounted control (ZN525/UC400)
- 6 = Office space comfort: FCU with EC fan motor and Trane factory-mounted control (ZN525/UC400)
- 7 = Retail store comfort: VAV with Trane factory-mounted control (UC210/UC400)
- 8 = Energy metering and monitoring: meters integrated through communication protocol, and data presented as graphs on the Trane Tracer™ SC/Tracer ES™ custom web pages

The advantage of single sourcing

Trane's delivered system offers an additional perspective, since every piece of the puzzle comes from the same manufacturer. It is far easier to coordinate equipment delivery, commissioning and fine tuning, since only one contact is involved for this. On top of this, Trane personnel are well trained for the entire system components, ensuring efficiency in commissioning, and fast response.

Energy savings

Various pre-engineered tactics, such as setpoint reset, time-of-day scheduling and duty cycle, have been implemented in the system to improve system energy efficiency, without altering system comfort management capability. Trane's system is easy to install, set up and use. This means that system updates, daily operations and maintenance can be done by operation personnel very easily, requiring very little training. Trane's system also has the capability to control ancillary equipment, such as lights, parking lots, energy meters, and any equipment controlled by to a time-of-day schedule. Trane's delivered BMS for commercial applications is a powerful answer to customers who want a very easy-to-use system, capable of simplifying their life all along the project life cycle.



Trane solutions for industries

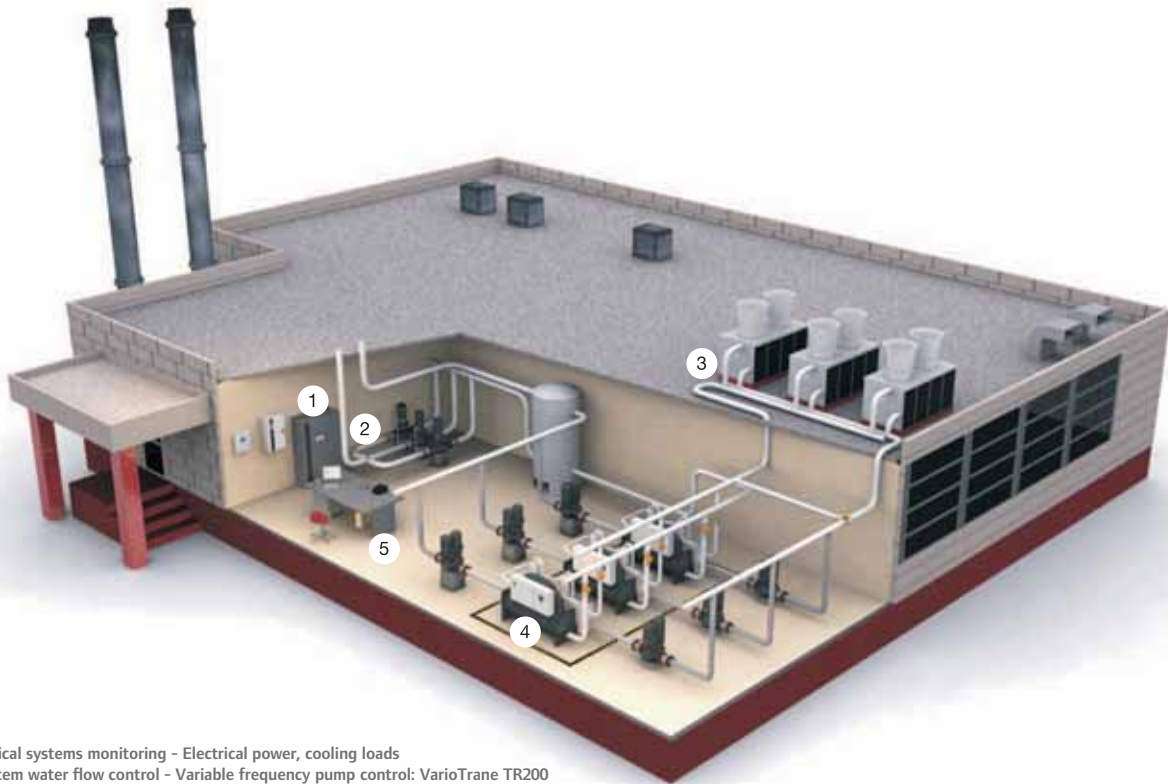
Reliable Trane systems your industry can count on

Trane has a wide experience in industrial control applications, starting from simple chillers to complex systems that are optimized for improved efficiency. One of the highest priorities of Trane engineers when designing an industrial application is to ensure a system that is reliable. Trane proposes systems that can revert to a safe standalone running mode should any issue such as communication troubles arise, continuing to deliver cooling capacity until the issue has been analyzed and fixed. In addition, Trane always proposes simple-to-use user interfaces which offer just the right amount of information about system status and running conditions. Since every piece of equipment is hooked up to a network, the user can access system and units information at any time, allowing for easy diagnosis, and easy understanding of system reactions.



Chiller Plant Management

Application is a pre-engineered function within Trane controllers, as to deliver a consistent, reliable and repeatable performance from project to project, with a minimum commissioning time.



- 1 = Critical systems monitoring - Electrical power, cooling loads
 2 = System water flow control - Variable frequency pump control: VarioTrane TR200
 3 = Chiller condenser operation - Cooling towers control: UC600
 4 = Chiller plant control: 3 RTWD helical-rotary chillers with factory-mounted CH530, Twin pump control for each chiller: Tracer™ SC
 5 = System monitoring and control - Supervision: web-based Trane Tracer ES™ and Tracer™ SC

Personalized optimization

Chiller technology and unit sizes arrangement are analyzed so you get the best result of their installation, according to their system load profile. Chiller Plant sequencing is a powerful pre-engineered function that only requires parameters to be able to drive the installation at its highest level of optimization.

Technical services

Trane proposes its simulation and solution evaluation software. Using this tool, you can easily evaluate the best alternative for solving a problem, by viewing the solutions from different angles, such as economical aspects, technical aspects, safety and reliability.

Trane Building Services

It is easy to get assistance from Trane in concluding a maintenance and service contract including HVAC and BMS equipment/software. This way, system fluctuations, fine tuning etc. can be done by people working in sync with those teams that have originally developed the application. This ensures service continuity as well as efficiency in answering any request of system improvement or adaptation.



Trane solutions for office buildings

Adapted to your evolving requirements

In addition to HVAC application solutions for large scale building projects, Trane has developed one of the most open Building Management System solutions available on the market. Trane's BMS caters to office building comfort applications with fully optimized functions.

These functions offer several unique advantages to you along the project cycle.

Trane's BMS is a highly flexible system that offers ease of (re)configuration. This allows the system to be adapted at every step of a project. Large buildings regularly require space rearrangements (open space) and Trane's system is fully capable of managing space reconfiguration, thanks to advanced master/slave capabilities of terminal unit's controller, perfectly fitted in the global BMS.

Trane's BMS is based on the latest web technologies, allowing for a high performance User Interface, as well as full flexibility with regards to accessing the system. Using a simple web browser software on any PC connected to the customer network, users can monitor and manage the assets, from wherever they are.

The system then allows multiple users to access the system simultaneously, improving the overall productivity in the asset management team.

Building its own electronic components was a choice that Trane made as to perfectly master the complete product life cycle, from development, engineering, manufacturing, up to maintenance, support and upgrade. This means that Trane's solution is reliable and offers full equipment integration and system interoperability.





- 1 = Weather information
- 2 = Chilled water plant: helical-rotary chillers with factory-mounted CH530: chiller plant control application
- 3 = Primary air control: AHU with factory-mounted UC600
- 4 = Open space comfort: BAC chilled beams with factory-mounted controller
- 5 = Environmental comfort: Lighting control, Sunblind control
- 6 = Tenant interface: setpoint and room conditions information: web server
- 7 = Web server application (Tracer™ SC/ Tracer ES™) broadcasting web pages to any workstation in the building
- 8 = Variable air flow control AHU and VariTrane™ valves: UC600, UC400 and UC210
- 9 = Hot water plant: boiler plant control: boiler plant control application
- 10 = Electrical power monitoring
- 11 = Interoperability: access control system monitoring: BACnet®+ LonTalk®

System efficiency

Trane has developed pre-engineered functions within Tracer controllers that allow a high level of system efficiency which can be seen from different angles:

Efficient commissioning – Minimum programming is required to set up these functions and the BMS project engineers can spend more time in fine-tuning the system rather than developing the applications from scratch.

Perfect equipment coordination – Each piece of Trane HVAC equipment comes with its own factory-mounted controller. All these controllers have been developed keeping in mind their possible association within a system and thus, their interaction is possible within Trane's BMS.

Fine-tuning– Trane's BMS allows operations managers to get a customized report of the current system status, by the simple click of a mouse.

Total comfort

Trane's excels in developing HVAC equipment.

Trane's engineers go further to consider the equipment in their global environment. This means that on top of ensuring equipment safeties and running condition efficiency, care has been taken to ensure low sound levels, energy savings, etc. Through the use of Trane's BMS, these aspects of equipment running conditions are further improved. As an example, a VAV box can be driven according to pressures and running conditions of the AHU that is serving it. Or the AHU that delivers primary air to a chilled beam system would shift from air-economizer mode to mechanical dehumidification if the outside air becomes too humid. The equipment exchanges data in order to align the respective working conditions to deliver the optimum service to the end user.



Chiller plant system applications

Trane's proven expertise in chillers has led to the development of advanced chiller plant control applications within its Building Management System. The system is also fully capable of handling boiler plants.

Trane is the expert in providing advanced HVAC applications knowledge. For example, our Variable Primary Flow system enables savings both on the equipment capital costs and operational costs. The use of other solutions, like ice storage, condensing pressure optimization, free cooling, heat recovery, water source heat pump systems, can bring your process up to 60% in energy savings. Trane will help you in selecting, designing and documenting the best systems for your building needs.

Most efficient results can be achieved with well-prepared piping arrangement. Trane specialists in hydraulics and chillers application always review the system drawings before any proposal is made. This helps Trane to clearly point out what the installation is really capable of delivering, and to position these capabilities regarding what is expected.

Once this is clear, Chilled Water System Management adds advanced capabilities to the customer's installation:

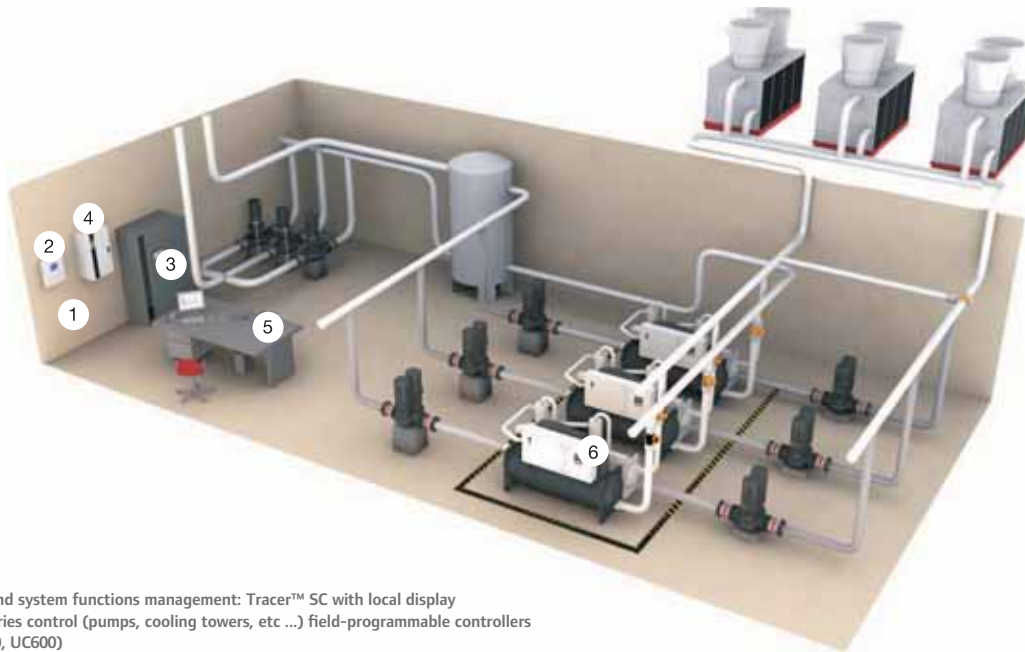
Flexibility

Chilled Water System Management offers flexible interfaces to operate a chiller plant. By a few mouse clicks, chillers can be turned into maintenance, sequence numbers can be adjusted and rotation can be initiated. The same interface also helps operation personnel exactly know what the installation has been doing, is currently doing and will be doing in the near future. At any time, the operator can anticipate system reactions. System graphics for plant operation can be monitored from an Intranet, using a web browser.

Energy savings

Chilled Water System Management always ensures that chillers are used in their most efficient operation conditions. Unit technology and environment conditions are monitored by Chilled Water System Management, which adjusts parameters according to changes in the system running conditions.

Should there be a change, the system anticipates and adds/removes chillers accordingly. The system also controls all ancillaries such as pumps, cooling towers, and dry coolers.



- 1 = Data and system functions management: Tracer™ SC with local display
 2 = Ancillaries control (pumps, cooling towers, etc ...) field-programmable controllers (UC400, UC600)
 3 = Plant control panel monitoring: field-programmable controllers (UC400, UC600)
 4 = Water flow control: VarioTrane VFD's (TR200 series)
 5 = User interface: local touchscreen PC, or any PC connected through web browser, web pages served by Trane Tracer™ SC
 6 = 3 RTHD helical-rotary chillers with Tracer UC800 Controller and TD7 Interface

Reliability

Chilled water production is crucial for your process and Trane's system ensures continuous delivery of chilled water. Every chiller is equipped with its own electronic controller embedded with an adaptive control algorithm. Each controller is fully compatible with the Building Management System and communicates over a standard protocol, sharing all its running conditions. This allows the management system to not only turn on/off chillers according to temperatures or temperature differences, but also consider current running conditions of chillers, such as maximum capacity reached, limit conditions, and so on, in order to know system capacity at all times.

Interoperability/integration

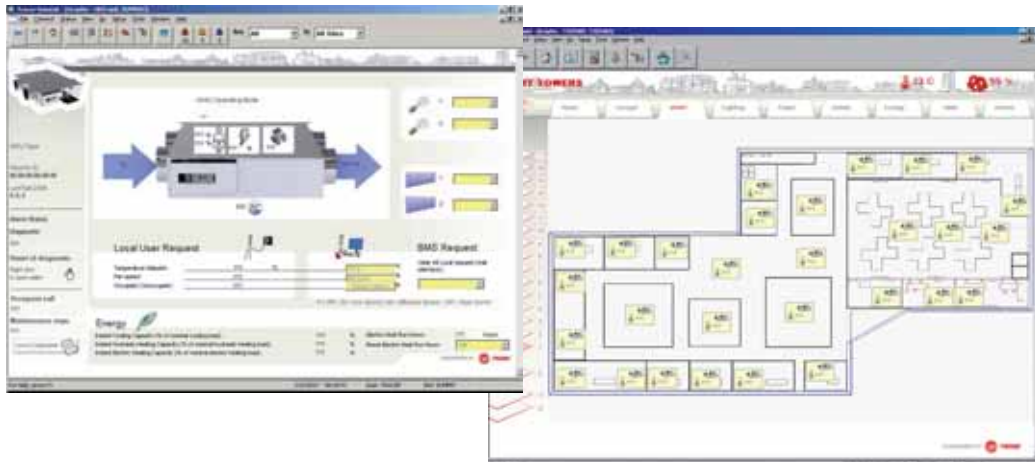
Trane systems are fully capable of communicating with any equipment and/or management system through the use of open standard protocols, such as BACnet®, or LonTalk®. Modbus is also supported allowing for a wide range of integration and data sharing with ancillaries, such as pumps, sensors or PLC's. Trane systems are capable of integrating either standard LonTalk® profiles as well as BACnet® MS/TP or IP-based devices.

Protection

Trane systems offer a high level of protection against unexpected system operation. Operators can be authorized to monitor data only, write setpoint and other parameters, create graphics or just view them, modify system layout, and so on. Every action on the system is recorded in an event log. Events can then be monitored, filtered by date/operator/device, etc. Events can be seen either at the PC level, or from a local touchscreen available in the plant room.

Assistance

Trane systems allow for system remote monitoring. Alarms can also be forwarded remotely. Trends, event log, system status can be accessed from any location where an access to the Internet/intranet is possible. After commissioning, Trane personnel can get connected to the system and monitor/fine tune parameters to adapt the overall system performance.



Water system applications

Water terminal units and chillers are Trane core products. Understanding how this equipment is being used together is part of Trane know-how that has been converted into a Management System. Other equipment serving building comfort system is also under Trane system, control such as air handling units, exhaust fans, water treatment, but also ancillaries such as lights, power distribution panels, and so on. The system that Trane offers covers key points for a project to be successful.

Comfort

Trane has developed advanced electronic controllers that offer individual comfort at each terminal unit level.

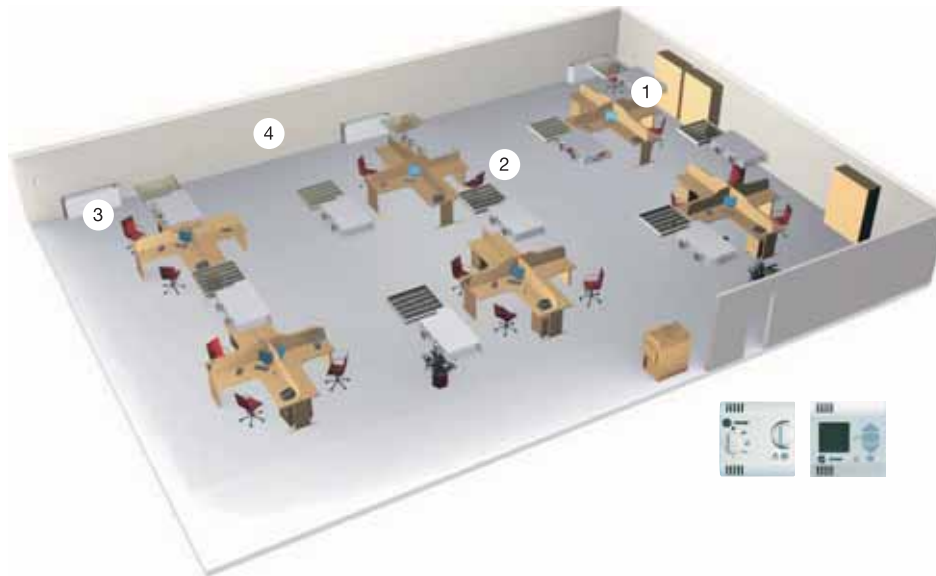
- Temperatures are monitored and controlled to stay within limits each user can adjust wall sensors or web pages.
- Sound level is maintained at its minimum value and air movement reduced as much as possible by the control of fan speed. Trane's offer also includes chilled beams which operate without a fan guaranteeing very low sound levels.

- Comfort is maintained year-round; cooling/heating modes are controlled automatically and intelligently, change over being totally transparent to the occupant.
- Comfort for the operation manager is also ensured. Master/slaving is now very easy to set up and reconfigure. Open space re-design can be done in very short period of time.
- Indoor Air Quality (IAQ) is also one of the advantages of a Trane system which is capable of monitoring and maintaining IAQ within optimum limits.

Ease of use

Trane systems communicate through open protocols (LonTalk® BACnet®). The system handles several types of user interfaces, so that every user can have access to the information he needs.

- Terminal units can be equipped with wall sensors embedding indications such as setpoint, timed override, and temperature values. This information can be adjusted within pre-determined limits.



- 1 = Open space comfort: UniTrane™ fan coil with factory-mounted ZN controller
 2 = Ancillaries control: Lighting control: EXL, Sunblind control: EXB
 3 = Open space comfort: UniTrane™ fan coil with factory-mounted ZN523, ZN525, or UC400 controllers
 4 = Tenant interface: Setpoint and room conditions information: Zone Sensor (ZSM 10.1, ZSM 10.2, ZSM 11)

- Operation managers can have access to system status by using an advanced graphical interface running on a PC. This status can be filtered and organized according to the use. Software interfaces integrate a user-friendly graphical interface allowing authorized users to change/create graphics to optimize them for their own use.
- Operation engineers can have access to system information in the different technical locations in the building by the use of VGA touchscreens, on which local data are presented.
- Time-of-day (TOD) scheduling offers a very convenient interface for TOD adjustment, group/zone creation or modifications.
- Every single piece of equipment in the system can be focused on. It can be overridden in any state as for maintenance or test purposes.
- Equipment or system alarms can be monitored and broadcasted on the system so that the best recipient can get a notice for this particular event and react in the most efficient manner.
- A web server allows for system performances monitoring from a PC equipped with a simple browser.

Savings

Through the coordination of all equipment within the building, it is quite simple for the management system to optimize energy consumption. Savings also are available at system design and system commissioning phases.

- Water system management can be organized, so that either chilled water or hot water production is handled in the most efficient way.
- Equipment schedules integrate a function of optimization, which determines building inertia and adjusts start/stop time according to temperatures/relative humidity and building occupancy.
- Each Trane piece of equipment is delivered with factory-mounted controls which are ready to work when the equipment leaves the factory.

Coordination of production (cooling/heating) and use (fan coils, air handling units, chilled beams...) is one of the best approaches to optimize system operation.

Communication is the key factor for this to be efficient. Communication is also an essential factor for some HVAC systems, such as chilled beams in which indoor terminals rely on the primary air AHU for zone humidity control. All Trane equipment integrates a standard protocol interface.



Notes

Handwriting practice lines consisting of 25 horizontal dotted lines.



TRANE®



Chillers

More than half of the large buildings in the world today have a Trane chiller at their core. Not only do our chillers help create comfort, they also help reduce your cost of operation, provide energy efficiency and minimize environmental impact.



CGAK

Air-cooled scroll chiller



Customer benefits

- Space saving: particularly slim design. The unit can be installed directly on a balcony, rooftop or ground without the need to have a plant room
- Contemporary appearance: blends in with the surrounding environment
- Quiet operation: low sound fans and components to achieve its low sound level

Main features

- Designed to couple with fan coil units and air handling units for residential or small commercial air conditioning applications
- Scroll compressor(s), plate type evaporator, finned-copper tube and aluminum condenser, axial fan assembly, expansion valve, indoor cold/warm control switch, water flow switch, filter dryer, sight-glass, integral water pump, galvanized sheet metal housing with powder paint, factory mounted control

Options

- Pressurized water tank system
- Condenser with blue fins corrosion protection

Control

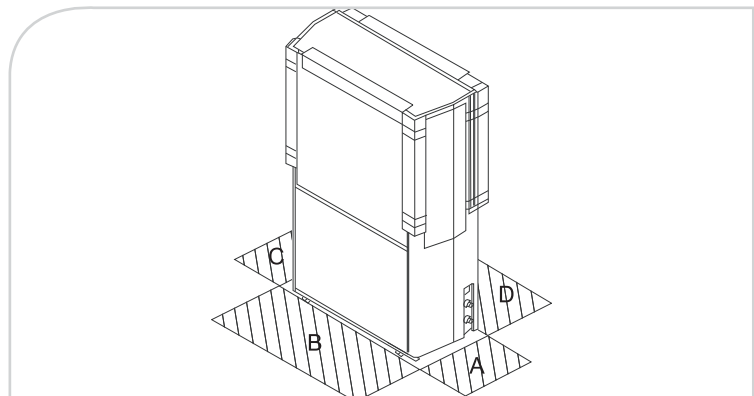
- LCD microprocessor-based adjustable water temperature control: precise temperature control of inlet chilled water, operation modes and system protection are provided by the long-range controller
- Password can be set and any abnormal condition will be monitored and captured to facilitate quick repair and normal operation
- Interlocking function of the two-way valve is available

This description may not include all options and accessories available. For full technical information, visit engineer.trane.com

Operating outdoor air temperature range (min./max.) (1)	(°C)	+18 / +43
Leaving water temperature range (min./max.) (1)	(°C)	+5 / +15
Power supply	(V/Ph/Hz)	400/3/50

CGAK		0505F	0605A	0755D	1005F	1505D	1505F
Net cooling capacity (1)	(kW)	13.1	15.6	19.5	26.2	39.0	38.0
Total power input in cooling (1)	(kW)	4.4	5.6	6.8	8.6	13.7	13.4
EER (1)		2.98	2.77	2.87	3.05	2.85	2.8
Number of refrigerant circuits		1	1	1	2	2	1
Number of compressors		1	1	1	2	2	1
Sound power level (2)	(dB(A))	62	61	63	64	66	70
Weights and dimensions (operating)							
Length	(mm)	950	950	1290	1290	1990	1290
Width	(mm)	393	393	500	500	500	500
Height	(mm)	1285	1285	1900	1900	1900	1900
Weight	(kg)	170	170	290	404	490	470
Clearance A	(mm)	300	300	300	300	300	300
Clearance B	(mm)	1500	1500	1500	1500	1500	1500
Clearance C	(mm)	300	300	300	300	300	300
Clearance D	(mm)	500	500	500	500	500	500
Electrical data							
Maximum amps	(A)	13.0	16.7	19.6	25.8	40.8	39.9
Start-up amps	(A)	65.5	101.0	95.0	65.5 x 2	95.0 x 2	198.0

(1) At 12/7°C entering/leaving water temperature and 35°C ambient air temperature with R407C
(2) With 1pW reference sound power, according to ISO9614





CGAX

Air-cooled scroll chiller Conquest



Customer benefits

The best value chiller thanks to:

- Low energy consumption: superior part load efficiency (ESEER)
- Silent operation: discreet, even in the most sound sensitive applications
- Unique feature: efficiency maintained when sound decreases
- Compact design: easier jobsite integration
- Reliability: main components designed and manufactured by Trane
- User-friendly control interface and interoperability with building automation systems
- Reduced refrigerant charge

Main features

- Compact design: reduced footprint and low profile design
- High quality finish
- One part load optimized efficiency level
- Two acoustic packages: SN, LN with no loss of efficiency
- Single and/or dual circuit offering
- Microchannel condenser coils
- Wide operating map: air-side and water side

Options

- Various integrated hydraulic modules: single/dual pump, low/high head pressure
- Buffer tank for reliable and smooth operation
- Low temperature process cooling ($<4^{\circ}\text{C}$)
- Low ambient operation (-18°C)
- E-coated condenser coil

Accessories

- Elastomeric isolators

Controls

- New Trane light commercial controller
- Standard 6 navigation button LCD display
- Optional deluxe display
 - Easy to read 7-inch color touchscreen display
 - Industry leading algorithms
 - Open protocol design
 - Adaptive control
- SmartCom interface: LonTalk®, Modbus®, BACnet® communication capabilities

This description may not include all options and accessories available. For full technical information, visit engineer.trane.com

Operating outdoor air temperature range (min./max.) (1)	(°C)	-18 / +46°C
Leaving water temperature range (min./max.) (2)	(°C)	-12 / 20°C
Power supply	(V/Ph/Hz)	400/3/50

CGAX Standard Efficiency		015	017	020	023	026	030	036	039	045	035	040	046	052	060
Cooling capacity (3)	(kW)	43.0	49.6	59.7	66.4	76.3	84.2	96.6	109.5	125.7	98.0	116.7	129.6	146.3	164.1
Total power input (3)	(kW)	14.6	17.4	19.0	22.1	25.8	29.0	33.0	37.5	42.0	34.4	38.9	45.5	53.4	57.4
EER (3)		2.95	2.85	3.14	3.01	2.96	2.90	2.93	2.92	2.99	2.85	3.00	2.85	2.74	2.86
ESEER (3)		3.96	4.01	3.90	3.90	4.04	3.96	4.05	4.28	4.00	3.95	3.66	3.67	3.76	3.88
Eurovent class		B	C	A	B	B	B	B	B	B	C	C	C	C	C
Sound power level (4)	(dBA)	83	83	85	85	85	86	84	85	87	86	88	88	88	89
Sound pressure level (5)	(dBA)	53	53	55	55	55	55	54	54	56	55	57	57	57	58
Sound power level (low noise) (4)	(dBA)	77	77	79	79	79	80	79	80	82	81	82	82	82	83
Sound pressure level (low noise) (5)	(dBA)	47	47	49	49	49	50	48	49	51	50	51	51	51	52
Number of circuit(s)		1	1	1	1	1	1	1	1	1	2	2	2	2	2
Number of compressors per circuit		2	2	2	2	2	2	3	3	3	2	2	2	2	2
Dimensions and weights (operating)															
Length	(mm)	2346	2346	2346	2346	2346	2346	2327	2327	2327	2327	2327	2327	2327	2327
Width	(mm)	1285	1285	1285	1285	1285	1285	2250	2250	2250	2250	2250	2250	2250	2250
Height	(mm)	1524	1524	1524	1524	1524	1524	1524	1524	1524	1524	1524	1524	1524	1524
Height (low noise)	(mm)	1747	1747	1747	1747	1747	1747	1747	1747	1747	1747	1747	1747	1747	1747
Clearance A	(mm)	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
Clearance B	(mm)	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
Clearance C	(mm)	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
Clearance D	(mm)	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
Weight	(kg)	497	509	552	557	587	599	819	824	879	887	973	983	1004	1029
Electrical data															
Maximum amps	(A)	33.9	38.6	45.7	50.8	55.9	64.3	74.1	81.3	101.0	76.8	91.0	101.2	111.4	128.2
Start-up amps	(A)	116.4	160.4	167.5	183.5	188.6	231.8	198.2	214.0	268.5	198.6	212.8	233.9	244.1	295.7

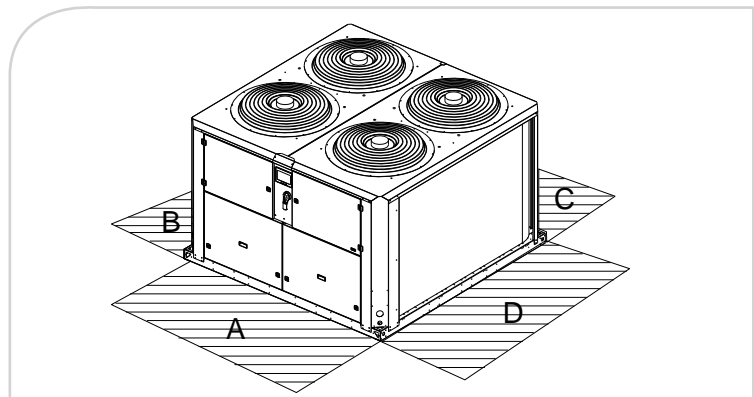
(1) With low ambient temperature option

(2) With process cooling option

(3) At Eurovent conditions: 12/7°C entering/leaving water temperature and 35°C ambient temperature according to EN 14-511

(4) At Eurovent conditions, with 1pW reference sound power, according to ISO9614

(5) Average at 10 meters in a free field. This is a non-contractual data, calculated from the above certified sound power level according to the formula $L_p = L_w - 10 \log S$. This is an averaged value considering the unit as a parallelepiped box with five exposed face areas.





CGAM

Air-cooled scroll chiller AquaStream™ 3G



Customer benefits

- Life cycle effectiveness
- Efficiency and sound level without compromise
- All year round operation
- Extreme reliability and durability
- Wide application flexibility for comfort and process applications to fit the exact requirements
- Ease of installation and serviceability

Main features

- 2 efficiency levels: high or standard
- 3 acoustic versions: standard, low noise or comprehensive acoustic package treatment
- High efficiency scroll compressors
- Trane design low sound level fans mounted on hinges
- Electronic expansion valve
- Brazed plates heat exchangers
- Disconnect switch/transformer
- Water strainer and flow switch
- Powder coated components

Options

- Integrated hydraulic module with or without buffer tank
- Single or double pump package
- Variable frequency drive for pump flow rate adjustment
- Freeze protection control
- Black epoxy condenser coil coating
- Architectural louvered panels

Accessories

- Neoprene isolators
- Grooved pipe connection kit

Tracer™ CH530 Control

Adaptive Control™ microprocessor featuring:

- Easy-to-use operator interface panel
- External auto/stop
- External interlock
- Chilled water pump control
- Ice-making card (optional)
- Chilled water and current-limit remote setpoint card (optional)
- LonTalk®, Modbus®, BACnet® communication capabilities

Energy saving options

- Total heat recovery with up to 80% recovery
- Partial heat recovery (desuperheater)

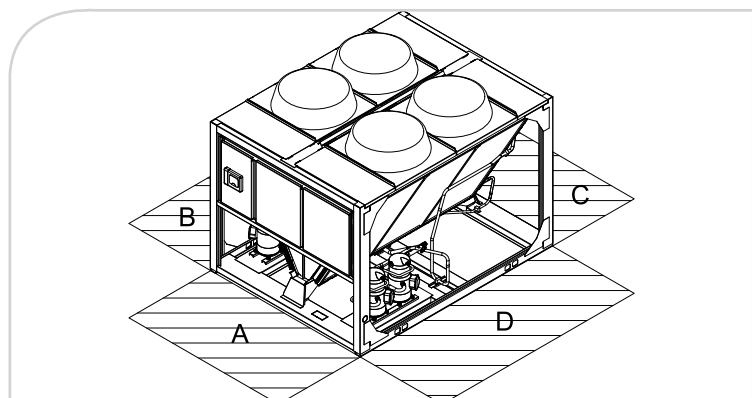
This description may not include all options and accessories available. For full technical information, visit engineer.trane.com

Operating outdoor air temperature range (min./max.) (1)	(°C)	-18/+46
Leaving water temperature range (min./max.) (2)	(°C)	-12/+18
Power supply	(V/Ph/Hz)	400/3/50

CGAM Standard Efficiency Compact		070	080	090	100	110	120	140	150	160	170
Net cooling capacity (4)	(kW)	186.0	221.1	248.0	273.3	295.3	325.7	379.2	405.3	432.1	458.1
Total power input net (4)	(kW)	69.1	80.4	89.5	102.0	107.8	112.3	132.1	144.7	153.8	159.1
EER net (4)		2.7	2.8	2.8	2.7	2.7	2.9	2.9	2.8	2.8	2.9
Eurovent class		D	C	C	D	C	B	C	C	C	C
ESEER net (4)		3.8	3.7	3.8	3.7	3.9	4.0	4.0	4.3	4.0	4.1
Number of refrigerant circuits		2	2	2	2	2	2	2	2	2	2
Number of compressors		4	4	4	4	4	4	6	6	6	6
Sound power level (5)	(dB(A))	93	94	94	94	96	94	94	94	95	95
Sound pressure level (6)	(dB(A))	60	62	62	62	63	61	62	62	63	63
Dimensions and weight (operating)											
Length	(mm)	2905	3819	3819	3819	3647	3647	4230	4230	4230	5145
Width	(mm)	2266	2266	2266	2266	2273	2273	2273	2273	2273	2273
Height	(mm)	2150	2150	2150	2150	2344	2344	2344	2344	2344	2344
Weight	(kg)	1775	2034	2165	2283	2475	2597	3035	3063	3153	3407
Clearance A	(mm)	1200	1200	1200	1200	1200	1200	1200	1200	1200	1200
Clearance B	(mm)	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
Clearance C	(mm)	800	800	800	800	1000	1000	1000	1000	1000	1000
Clearance D	(mm)	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
Electrical data											
Maximum amps	(A)	152.0	181.4	204.3	227.2	240.6	254.0	313.5	329.6	349.8	363.2
Start-up amps	(A)	327.2	356.6	413.1	436.0	502.7	516.1	522.3	538.4	611.9	625.3

CGAM Standard Efficiency Super Quiet		070	080	090	100	110	120	140	150	160	170
Net cooling capacity (4)	(kW)	183.2	217.2	244.5	268.8	290.4	320.1	372.6	398.0	422.7	451.5
Total power input net (4)	(kW)	69.1	79.9	88.9	101.8	108.8	113.5	134.0	147.4	156.5	160.1
EER net (4)		2.7	2.7	2.8	2.6	2.7	2.8	2.8	2.7	2.7	2.8
Eurovent class		D	C	C	D	D	C	C	C	C	C
ESEER net (4)		2.7	2.7	2.8	2.6	2.7	2.8	2.8	2.7	2.7	2.8
Number of refrigerant circuits		2	2	2	2	2	2	2	2	2	2
Number of compressors		4	4	4	4	4	4	6	6	6	6
Sound power level (5)	(dB(A))	89	91	91	90	92	91	91	90	92	92
Sound pressure level (6)	(dB(A))	57	59	59	58	60	59	59	58	59	60
Dimensions and weight (operating)											
Length	(mm)	2905	3819	3819	3819	3647	3647	4230	4230	4230	5145
Width	(mm)	2266	2266	2266	2266	2273	2273	2273	2273	2273	2273
Height	(mm)	2150	2150	2150	2150	2344	2344	2344	2344	2344	2344
Weight	(kg)	1775	2034	2165	2283	2475	2597	3035	3063	3153	3407
Clearance A	(mm)	1200	1200	1200	1200	1200	1200	1200	1200	1200	1200
Clearance B	(mm)	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
Clearance C	(mm)	800	800	800	800	1000	1000	1000	1000	1000	1000
Clearance D	(mm)	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
Electrical data											
Maximum amps	(A)	155.6	186.8	209.7	232.6	246.0	259.4	320.7	335.0	357.0	370.4
Start-up amps	(A)	330.8	362.0	418.5	441.4	508.1	521.5	529.5	543.8	619.1	632.5

- (1) With low ambient option
(2) With process cooling options
(3) At Eurovent conditions: 12/7°C entering/leaving water temperature and 35°C ambient air temperature
(4) At Eurovent conditions and according to EN 14-511
(5) At Eurovent conditions, with 1pW reference sound power, according to ISO9614
(6) At 10 m in free field, calculated from the above sound power level according to the formula $L_p = L_w - 10 \log 5$



Operating outdoor air temperature range (min./max.) (1)	(°C)	-18/+46
Leaving water temperature range (min./max.) (2)	(°C)	-12/+18
Power supply	(V/Ph/Hz)	400/3/50

CGAM Standard Efficiency Comprehensive Acoustic Package		070	080	090	100	110	120	140	150	160
Net cooling capacity (4)	(kW)	180.4	213.0	236.5	262.5	288.3	318.0	369.7	393.1	420.6
Total power input net (4)	(kW)	68.8	78.0	88.9	100.2	106.8	111.6	133.9	147.2	152.4
EER net (4)		2.6	2.7	2.7	2.6	2.7	2.9	2.8	2.7	2.8
Eurovent class		D	C	D	D	C	C	C	D	C
ESEER net (4)		4.1	4.3	4.4	4.4	4.3	4.3	4.7	4.6	4.5
Number of refrigerant circuits		2	2	2	2	2	2	2	2	2
Number of compressors		4	4	4	4	4	4	6	6	6
Sound power level (5)	(dB(A))	84	85	85	85	87	86	85	85	86
Sound pressure level (6)	(dB(A))	52	53	53	53	54	53	52	52	54
Dimensions and weight (operating)										
Length	(mm)	3819	3819	3647	4230	4230	4230	5145	5145	5145
Width	(mm)	2266	2266	2273	2273	2273	2273	2273	2273	2273
Height	(mm)	2150	2150	2344	2344	2344	2344	2344	2344	2344
Weight	(kg)	2076	2151	2471	2664	2754	2898	3436	3561	3651
Clearance A	(mm)	1200	1200	1200	1200	1200	1200	1200	1200	1200
Clearance B	(mm)	1000	1000	1000	1000	1000	1000	1000	1000	1000
Clearance C	(mm)	800	800	1000	1000	1000	1000	1000	1000	1000
Clearance D	(mm)	1000	1000	1000	1000	1000	1000	1000	1000	1000
Electrical data										
Maximum amps	(A)	146.5	169.1	192.0	214.9	231.0	244.4	297.1	320.0	336.1
Start-up amps	(A)	321.7	344.3	400.8	423.7	493.1	506.5	505.9	528.8	598.2

(1) With low ambient option

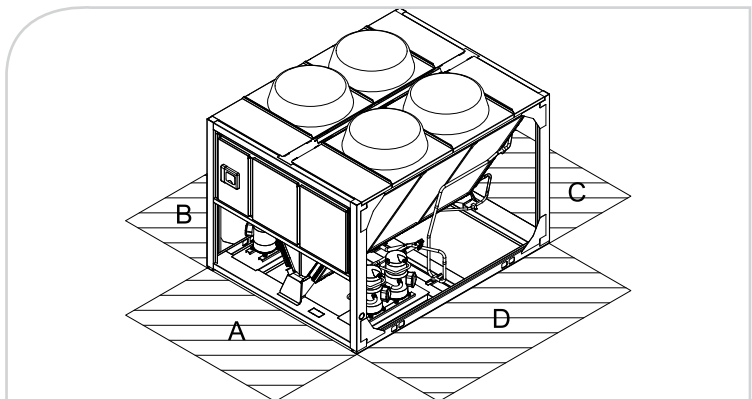
(2) With process cooling options

(3) At Eurovent conditions: 12/7°C entering/leaving water temperature and 35°C ambient air temperature

(4) At Eurovent conditions and according to EN 14-511

(5) At Eurovent conditions, with 1pW reference sound power, according to ISO9614

(6) At 10 m in free field, calculated from the above sound power level according to the formula $L_p = L_w - 10 \log S$

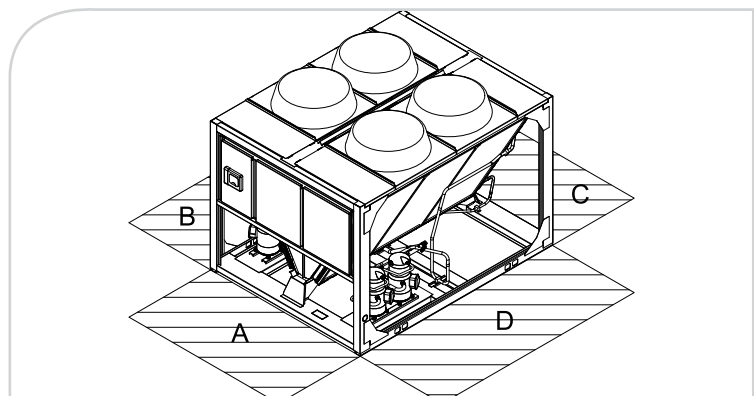


Operating outdoor air temperature range (min./max.) (1)	(°C)	-18/+52
Leaving water temperature range (min./max.) (2)	(°C)	-12/+18
Power supply	(V/Ph/Hz)	400/3/50

CGAM HE Compact		070	080	090	100	110	120	140	150	160
Net cooling capacity (4)	(kW)	193.2	223.2	253.8	282.2	310.6	331.2	390.3	417.4	441.4
Total power input net (4)	(kW)	63.3	72.9	80.8	90.7	98.6	108.2	126.3	134.7	144.3
EER net (4)		3.1	3.1	3.1	3.1	3.2	3.1	3.1	3.1	3.1
Eurovent class		B	B	A	A	A	B	B	A	B
ESEER net (4)		4.1	4.2	4.5	4.1	4.3	4.3	4.4	4.2	4.2
Number of refrigerant circuits		2	2	2	2	2	2	2	2	2
Number of compressors		4	4	4	4	4	4	6	6	6
Sound power level (5)	(dB(A))	91	91	91	92	92	93	93	94	94
Sound pressure level (6)	(dB(A))	59	59	59	60	60	61	61	61	62
Dimensions and weight (operating)										
Length	(mm)	3819	3647	3647	4230	4230	4230	5145	6060	6060
Width	(mm)	2266	2273	2273	2273	2273	2273	2273	2273	2273
Height	(mm)	2150	2344	2344	2344	2344	2344	2344	2344	2344
Weight	(kg)	2078	2378	2503	2804	2821	2821	3403	3881	3881
Clearance A	(mm)	1200	1200	1200	1200	1200	1200	1200	1200	1200
Clearance B	(mm)	1000	1000	1000	1000	1000	1000	1000	1000	1000
Clearance C	(mm)	800	1000	1000	1000	1000	1000	1000	1000	1000
Clearance D	(mm)	1000	1000	1000	1000	1000	1000	1000	1000	1000
Electrical data										
Maximum amps	(A)	326.2	348.8	405.3	432.4	499.1	512.5	516.1	539.0	609.9
Start-up amps	(A)	151.0	173.6	196.5	223.6	237.0	250.4	307.3	330.2	347.8

CGAM HE Super Quiet		070	080	090	100	110	120	140	150	160
Net cooling capacity (4)	(kW)	192.8	224.2	254.1	282.5	310.6	331.2	389.9	417.8	441.1
Total power input net (4)	(kW)	63.4	72.3	80.4	90.3	98.3	108.2	126.2	135.2	143.7
EER net (4)		3.0	3.1	3.2	3.1	3.2	3.1	3.1	3.1	3.1
Eurovent class		B	A	A	A	A	B	B	B	B
ESEER net (4)		4.2	4.3	4.6	4.3	4.4	4.4	4.5	4.5	4.3
Number of refrigerant circuits		2	2	2	2	2	2	2	2	2
Number of compressors		4	4	4	4	4	4	6	6	6
Sound power level (5)	(dB(A))	87	88	88	88	89	90	90	89	90
Sound pressure level (6)	(dB(A))	55	56	56	56	57	58	57	57	58
Dimensions and weight (operating)										
Length	(mm)	3819	3647	3647	4230	4230	4230	5145	6060	6060
Width	(mm)	2266	2273	2273	2273	2273	2273	2273	2273	2273
Height	(mm)	2150	2344	2344	2344	2344	2344	2344	2344	2344
Weight	(kg)	2078	2378	2503	2804	2821	2821	3403	3791	3881
Clearance A	(mm)	1200	1200	1200	1200	1200	1200	1200	1200	1200
Clearance B	(mm)	1000	1000	1000	1000	1000	1000	1000	1000	1000
Clearance C	(mm)	800	1000	1000	1000	1000	1000	1000	1000	1000
Clearance D	(mm)	1000	1000	1000	1000	1000	1000	1000	1000	1000
Electrical data										
Maximum amps	(A)	326.2	348.8	405.3	432.4	499.1	512.5	516.1	539.0	609.9
Start-up amps	(A)	151.0	173.6	196.5	223.6	237.0	250.4	307.3	330.2	347.8

- (1) With low ambient option
 (2) With process cooling options
 (3) At Eurovent conditions: 12/7°C entering/leaving water temperature and 35°C ambient air temperature
 (4) At Eurovent conditions and according to EN 14-511
 (5) At Eurovent conditions, with 1pW reference sound power, according to ISO9614
 (6) At 10 m in free field, calculated from the above sound power level according to the formula $L_p = L_w - 10 \log S$



Operating outdoor air temperature range (min./max.) (1)	(°C)	-18/+52
Leaving water temperature range (min./max.) (2)	(°C)	-12/+18
Power supply	(V/Ph/Hz)	400/3/50

CGAM HE Comprehensive Acoustic Package		070	080	090	100	110	120	140	150	160
Net cooling capacity (4)	(kW)	190.0	225.0	254.8	280.4	301.4	330.9	389.6	412.6	431.4
Total power input net (4)	(kW)	64.6	70.1	78.9	90.8	98.2	105.7	124.5	136.2	146.7
EER net (4)		2.9	3.2	3.2	3.1	3.1	3.1	3.1	3.0	2.9
Eurovent class		B	A	A	B	B	A	A	B	B
ESEER net (4)		4.4	4.8	4.7	4.5	4.6	4.5	4.7	4.5	4.4
Number of refrigerant circuits		2	2	2	2	2	2	2	2	2
Number of compressors		4	4	4	4	4	4	6	6	6
Sound power level (5)	(dB(A))	84	83	83	84	85	86	85	85	86
Sound pressure level (6)	(dB(A))	52	50	51	51	52	54	53	53	54
Dimensions and weight (operating)										
Length	(mm)	3819	4230	4230	4230	5145	5145	6060	6060	6060
Width	(mm)	2266	2273	2273	2273	2273	2273	2273	2273	2273
Height	(mm)	2150	2344	2344	2344	2344	2344	2344	2344	2344
Weight	(kg)	2168	2596	2804	2918	3172	3279	3941	4035	4035
Clearance A	(mm)	1200	1200	1200	1200	1200	1200	1200	1200	1200
Clearance B	(mm)	1000	1000	1000	1000	1000	1000	1000	1000	1000
Clearance C	(mm)	800	1000	1000	1000	1000	1000	1000	1000	1000
Clearance D	(mm)	1000	1000	1000	1000	1000	1000	1000	1000	1000
Electrical data										
Maximum amps	(A)	321.7	344.3	403.5	426.4	493.1	509.2	511.3	534.2	600.9
Start-up amps	(A)	146.5	169.1	194.7	217.6	231.0	247.1	302.5	325.4	338.8

(1) With low ambient option

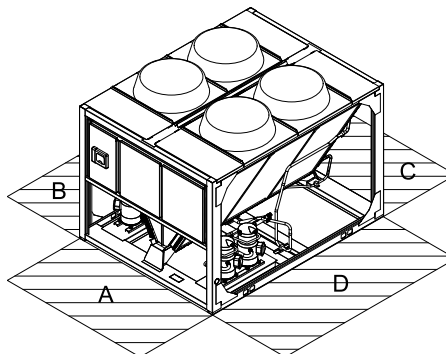
(2) With process cooling options

(3) At Eurovent conditions: 12/7°C entering/leaving water temperature and 35°C ambient air temperature

(4) At Eurovent conditions and according to EN 14-511

(5) At Eurovent conditions, with 1pW reference sound power, according to ISO9614

(6) At 10 m in free field, calculated from the above sound power level according to the formula $L_p = L_w - 10 \log S$



Save energy with total or partial heat recovery factory-fitted options on CGAM

- Reduced operating cost
- Pre-heat sanitary water (for commercial buildings) or kitchen and laundries water (in hotels and resorts)
- Reduced carbon footprint

Total heat recovery - model CGAM HE compact

	Unit power input (1)	Cooling capacity in cooling (1)	Heating capacity (2)	Heat recovered (2)	Maximum hot water temperature
Unit size	(kW)	(kW)	(kW)	(%)	(°C)
070	63.8	194.4	146.1	75	60
080	73.1	225.4	169.6	75	60
090	81	255.6	182.2	71	60
100	91	284.1	193.7	68	60
110	98.8	312.9	218.5	70	60
120	108.6	333.7	228.2	68	60
140	126.6	393.4	271.1	69	60
150	134.7	421.2	282.0	67	60
160	143.9	445.5	311.4	70	60

Partial heat recovery - model CGAM HE compact

	Unit power input (1)	Cooling capacity in cooling (1)	Heating capacity (2)	Heat recovered (2)	Maximum hot water temperature
Unit size	(kW)	(kW)	(kW)	(%)	(°C)
070	64.0	194.1	59.3	31	60
080	74.3	224.7	60.6	27	60
090	82.3	254.9	75.4	30	60
100	92.4	283.4	77.4	27	60
110	100.3	312.2	89.2	29	60
120	110.2	332.6	101.5	31	60
140	128.6	392.4	115.1	29	60
150	136.8	420.5	116.2	28	60
160	146.2	444.4	127.4	29	60

(1) At Eurovent conditions: 12/7°C entering/leaving water temperature and 35°C ambient air temperature

(2) At 40/45°C entering/leaving water temperature



RTAD

Air-cooled helical-rotary chiller Series R™



Customer benefits

- Reliability: Trane helical-rotary compressor with only 3 moving parts
- Ease of installation: wide choice of hydraulic modules

Main features

- Competitive physical footprint
- Single power connection
- Low sound levels
- Star-delta starter
- Exact load matching
- Application flexibility

Options

- High ambient operation (up to 52°C)
- Low ambient operation (down to -18°C)
- Low noise version equipped with low-speed fans and compressor sound attenuating
- High efficiency version
- Power disconnect switch
- Condenser protection or complete unit protection
- Night noise setback to reduce sound levels at night
- High and low pressure gauges
- Hydraulic module – single or dual pump with water strainer
- 60 Hz unit

Accessories

- Neoprene isolators
- Grooved pipe connection kit
- Flow switch

UCM-CLD Control

Adaptive Control™ microprocessor featuring:

- Unit control module with clear language display
- External auto/stop
- External interlock
- Chilled water pump control
- Alarm indication contacts
- Ice-making card (optional)
- LonTalk® or Modbus® communication capabilities
- Chilled water and current limit remote setpoint card (optional)

Energy saving options

- High efficiency version, heat recovery, free cooling

This description may not include all options and accessories available. For full technical information, visit engineer.trane.com

Operating outdoor air temperature range (min./max.) (1)	(°C)	-18 / +52
Leaving water temperature range (min./max.) (2)	(°C)	-12 / +18
Power supply	(V/Ph/Hz)	400/3/50

RTAD Standard Efficiency		085	100	115	125	145	150	165	180
Net cooling capacity (3)	(kW)	273	334	390	445	514	549	601	646
Total power input net (3)	(kW)	102	131	151	189	194	214	225	245
EER net		2.68	2.55	2.58	2.35	2.65	2.57	2.67	2.63
Eurovent class		D	D	D	E	D	D	D	D
ESEER net		3.23	3.13	3.22	3.07	3.31	3.13	3.30	3.16
Number of refrigerant circuits		2							
Number of compressors / minimum load		2 / 15%							
Sound power level (standard noise version) (4)	(dB(A))	97	98	97	97	98	101	102	103
Sound pressure level (standard noise version) (6)	(dB(A))	65	65	64	65	66	69	70	70
Sound power level (low noise version) (4)	(dB(A))	92	92	92	92	94	95	95	96
Sound pressure level (low noise version) (6)	(dB(A))	60	60	60	60	62	63	63	63

RTAD High Efficiency		085	100	115	125	145	150	165	180
Net cooling capacity (3)	(kW)	296	359	416	487	523	561	-	-
Total power input net (3)	(kW)	97	124	146	178	184	203	-	-
EER net		3.04	2.89	2.85	2.73	2.84	2.77	-	-
Eurovent class		B	C	C	C	C	C	-	-
ESEER net		3.7	3.44	3.65	3.27	3.5	3.32	-	-
Number of refrigerant circuits		2							
Number of compressors / minimum load		2 / 15%							
Sound power level (standard noise version) (4)	(dB(A))	97	98	98	99	101	102	-	-
Sound pressure level (standard noise version) (6)	(dB(A))	65	66	65	66	69	69	-	-
Sound power level (low noise version) (4)	(dB(A))	92	93	93	94	95	95	-	-
Sound pressure level (low noise version) (6)	(dB(A))	61	62	61	62	63	63	-	-

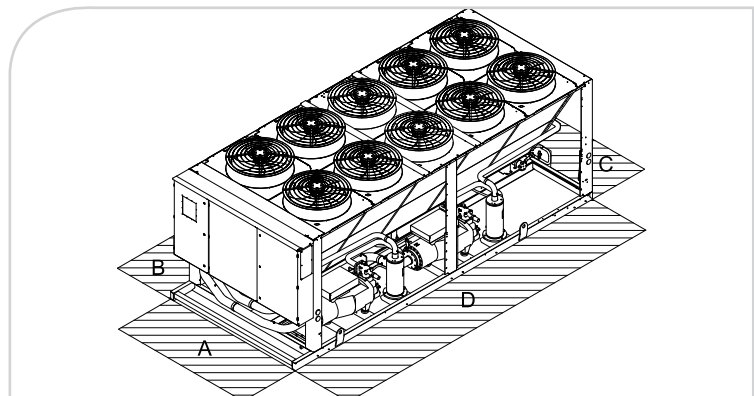
Weights and dimensions (5) (operating)

Length	(mm)	3507	4426	4426	4426	5351	5351	6370	6370
Width	(mm)	2260	2260	2260	2260	2260	2260	2260	2260
Height	(mm)	2068	2068	2068	2068	2088	2088	2188	2188
Weight	(kg)	2810	3635	3635	3635	4605	4605	5430	5430
Clearance A	(mm)	1000	1000	1000	1000	1000	1000	1000	1000
Clearance B	(mm)	1200	1200	1200	1200	1200	1200	1200	1200
Clearance C	(mm)	1000	1000	1000	1000	1000	1000	1000	1000
Clearance D	(mm)	1200	1200	1200	1200	1200	1200	1200	1200

Electrical data

Maximum amps	(A)	242	282	323	387	437	477	527	576
Start-up amps	(A)	255	306	359	425	471	502	570	608

- (1) With low and high ambient temperature option
 (2) With 3 pass evaporator
 (3) At Eurovent conditions: 12/7°C entering/leaving water temperature and 35°C ambient air temperature
 (4) At Eurovent conditions, with 1pW reference sound power, according to ISO9614
 (5) Dimensions for standard efficiency model
 (6) At 10 m in free field, calculated from the above sound power level according to the formula $L_p = L_w - 10 \log 5$



Save energy with total or partial heat recovery factory-fitted options on RTAD

Customer benefits

- Reduced operating cost
- Pre-heat sanitary water (for commercial buildings) or kitchen and laundries water (in hotels and resorts)
- Reduced carbon footprint

Total heat recovery - model RTAD

	Unit power input (1)	Cooling capacity in cooling (1)	Heating capacity (2)	Heat recovered (2)	Maximum hot water temperature
Unit size	(kW)	(kW)	(kW)	(%)	(°C)
085	217.6	269.9	217.6	81	60
100	252.1	313.0	252.1	81	60
115	309.1	380.3	309.1	81	60
125	368.1	452.2	368.1	81	60
145	394.8	486.9	394.8	81	60
150	426.9	524.1	426.9	81	60

Partial heat recovery - model RTAD

	Unit power input (1)	Cooling capacity in cooling (1)	Heating capacity (2)	Heat recovered (2)	Maximum hot water temperature
Unit size	(kW)	(kW)	(kW)	(%)	(°C)
085	95.9	297.45	47.4	16	60
100	122.2	360.39	57.6	16	60
115	144.2	418.05	89.4	21	60
125	176.1	489.78	112.4	23	60
145	182.9	524.59	115.4	22	60
150	201.6	562.91	129.2	23	60

(1) At Eurovent conditions: 12/7°C entering/leaving water temperature and 35°C ambient air temperature

(2) At 40/45°C entering/leaving water temperature

Save energy with free cooling factory-fitted options on RTAD

Customer benefits

- Reduced operating cost
- Longer chiller life: less work and wear on compressors
- Reduced carbon footprint

Free cooling - model RTAD

			Free cooling mode		
	Cooling capacity (1)	Compressor mode power input (1)	Efficiency	Cooling capacity (2)	Compressor mode power input (2)
Unit size	(kW)	(kW)		(kW)	(kW)
085	284	101.5	2.80	220	14.6
100	340	123.2	2.76	294	20.5
115	397	156.6	2.54	315	19.3
125	462	192.5	2.40	325	25.2
145	502	197	2.55	399	26.7
150	535	219	2.44	398	30

(1) At Eurovent conditions: 12/7°C entering/leaving water temperature and 35°C ambient air temperature

(2) At 11°C leaving water temperature and 0°C entering condenser air temperature





RTAC

Air-cooled helical-rotary chiller Series R™



Customer benefits

- Reliability: Trane helical-rotary compressor with only 3 moving parts
- Efficiency: 3 efficiency levels, to fit your requirements
- Certified Eurovent class A

Main features

- Competitive physical footprint
- Single power connection
- Exact load matching
- Low sound levels
- Falling film evaporator - high COP and reduced refrigerant charge
- Factory-mounted star-delta starter panel
- Close spacing installation - 1.2 m side clearances

Options

- High ambient operation (up to 52°C)
- Low ambient operation (down to -18°C)
- Low noise version equipped with low-speed fans and compressor sound attenuating enclosure
- High efficiency version
- Power disconnect switch
- Night noise setback to reduce sound levels at night
- Unit edge grooved pipe connections
- Extra-pass and specific tubes for low water temperature applications (down to -12°C)
- Black epoxy-coated aluminium fins for corrosive environments

- Copper fins
- Condenser protection or complete unit protection
- High and low pressure gauges

Accessories

- Neoprene isolators
- Grooved pipe connection kit
- Flow switch

Tracer™ CH530 Control

Adaptive Control™ microprocessor featuring:

- Easy-to-use operator interface panel
- External auto/stop
- External interlock
- Chilled water pump control
- Ice-making card (optional)
- Chilled water and current-limit remote setpoint card (optional)

Energy saving options

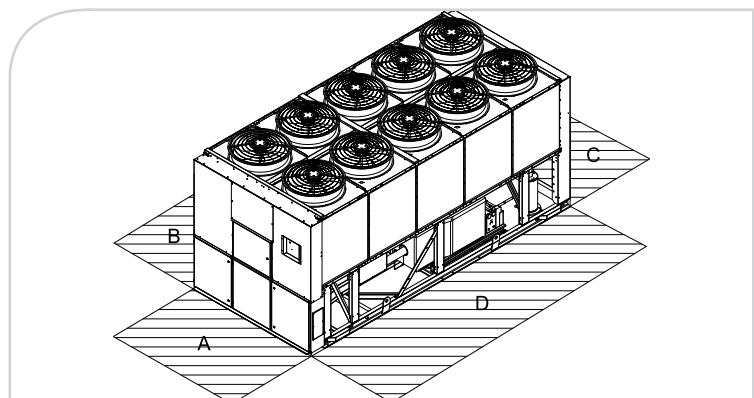
- High efficiency and extra high efficiency versions

This description may not include all options and accessories available. For full technical information, visit engineer.trane.com

Operating outdoor air temperature range (min./max.) (1)	(°C)	-18 / +52
Leaving water temperature range (min./max.) (2)	(°C)	-12 / +18
Power supply	(V/Ph/Hz)	400/3/50

RTAC Standard Efficiency		140	155	170	185	200	230	240	250	275	300	350	375	400
Net cooling capacity (3)	(kW)	491	536	583	646	713	768	851	848	944	1073	1186	1317	1445
Total power input net (3)	(kW)	172	189	208	227	247	265	300	296	334	374	424	464	505
EER net		2.86	2.83	2.81	2.85	2.89	2.90	2.84	2.86	2.83	2.87	2.80	2.84	2.86
Eurovent class		C	C	C	C	C	B	C	C	C	C	C	C	C
ESEER net		3.59	3.60	3.52	3.63	3.58	3.85	3.96	3.85	3.77	4.81	3.92	3.97	3.98
Number of refrigerant circuits		2												
Number of compressors / minimum load		2 / 15%					3 / 10%					4 / 8%		
Sound power level (standard noise version) (4)	(dB(A))	97	98	99	100	100	99	99	99	101	102	101	102	103
Sound pressure level (standard noise version) (5)	(dB(A))	65	66	66	67	68	67	67	67	68	69	68	69	70
Sound power level (low noise version) (4)	(dB(A))	90	91	92	92	93	92	92	92	94	95	95	95	96
Sound pressure level (low noise version) (5)	(dB(A))	58	59	59	60	60	59	59	59	61	62	62	62	63
Weights and dimensions (operating)														
Length	(mm)	5041	5041	5041	5960	5960	7133	7133	9138	9138	10056	10406	11325	12244
Width	(mm)	2240	2240	2240	2240	2240	2250	2250	2250	2250	2250	2250	2250	2250
Height	(mm)	2411	2411	2411	2411	2411	2530	2530	2530	2530	2530	2530	2530	2530
Weight	(kg)	4580	4760	4895	5470	5590	7875	8255	7890	8690	9380	10735	11355	11930
Clearance A	(mm)	1000	1000	1000	1000	1000	1200	1200	1000	1000	1000	1200	1200	1200
Clearance B	(mm)	1200	1200	1200	1200	1200	1200	1200	1200	1200	1200	1200	1200	1200
Clearance C	(mm)	1000	1000	1000	1000	1000	1200	1200	1200	1200	1200	1200	1200	1200
Clearance D	(mm)	1200	1200	1200	1200	1200	1200	1200	1200	1200	1200	1200	1200	1200
Electrical data														
Maximum amps	(A)	386	426	465	514	562	606	668	668	747	844	930	1027	1124
Start-up amps	(A)	424	460	490	557	594	629	677	677	738	813	851	955	1030

- (1) With low and high ambient temperature option
(2) With 3 pass evaporator
(3) At Eurovent conditions: 12/7°C entering/leaving water temperature and 35°C ambient air temperature
(4) At Eurovent conditions, with 1pW reference sound power, according to ISO9614
(5) At 10 m in free field, calculated from the above sound power level according to the formula $L_p = L_w - 10 \log 5$



Operating outdoor air temperature range (min./max.) (1)	(°C)	-18 / +52
Leaving water temperature range (min./max.) (2)	(°C)	-12 / +18
Power supply	(V/Ph/Hz)	400/3/50

RTAC High Efficiency		250	275	300	350	375	400
Net cooling capacity (3)	(kW)	875	976	1108	1223	1359	1496
Total power input net (3)	(kW)	293	323	363	412	452	492
EER net		2.99	3.02	3.05	2.97	3.01	3.04
Eurovent class		B	B	B	B	B	B
ESEER net		3.84	3.9	3.89	3.94	3.97	4.01
Number of refrigerant circuits		2					
Number of compressors / minimum load		2 / 15%			4 / 8%		
Sound power level (standard noise version) (4)	(dB(A))	100	102	102	102	103	103
Sound pressure level (standard noise version) (4) (5)	(dB(A))	67	69	69	69	70	70
Sound power level (low noise version) (4)	(dB(A))	93	95	95	95	96	96
Sound pressure level (low noise version) (4) (5)	(dB(A))	60	62	62	62	63	63
Weights and dimensions (operating)							
Length	(mm)	9138	10975	11894	12244	13163	14082
Width	(mm)	2250	2250	2250	2250	2250	2250
Height	(mm)	2530	2530	2530	2530	2530	2530
Weight	(kg)	8359	9718	10258	11973	12507	13185
Clearance A	(mm)	1000	1000	1000	1200	1200	1200
Clearance B	(mm)	1200	1200	1200	1200	1200	1200
Clearance C	(mm)	1200	1200	1200	1200	1200	1200
Clearance D	(mm)	1200	1200	1200	1200	1200	1200
Electrical data							
Maximum amps	(A)	675	754	851	944	1041	1138
Start-up amps	(A)	684	745	820	865	969	1044

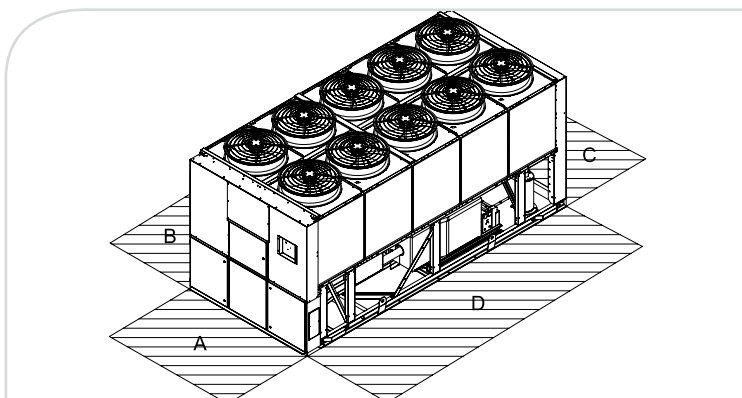
(1) With low and high ambient temperature option

(2) With 3 pass evaporator

(3) At Eurovent conditions: 12/7°C entering/leaving water temperature and 35°C ambient air temperature

(4) At Eurovent conditions, with 1pW reference sound power, according to ISO9614

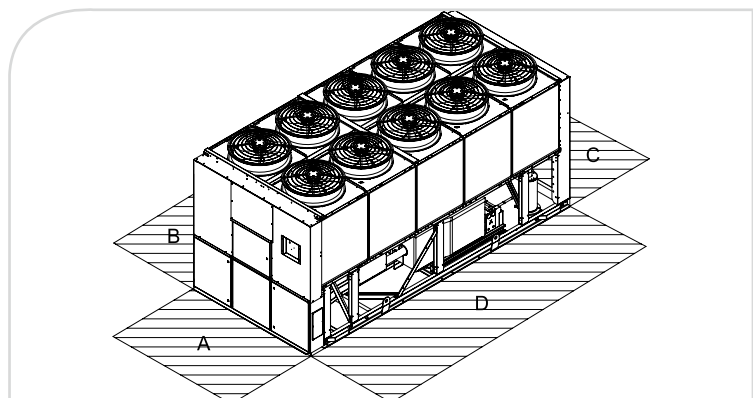
(5) At 10 m in free field, calculated from the above sound power level according to the formula $L_p = L_w - 10 \log 5$



Operating outdoor air temperature range (min./max.) (1)	(°C)	-18 / +52
Leaving water temperature range (min./max.) (2)	(°C)	-12 / +18
Power supply	(V/Ph/Hz)	400/3/50

RTAC Extra Efficiency		255	275	300	355	375	400
Net cooling capacity (3)	(kW)	896	996	1125	1286	1383	1511
Total power input net (3)	(kW)	286	322	360	413	449	487
EER net		3.13	3.09	3.12	3.11	3.08	3.10
Eurovent class		A	B	A	A	B	A
ESEER net		3.98	3.88	3.96	4.08	4.04	4.03
Number of refrigerant circuits		2					
Number of compressors / minimum load		2 / 15%			4 / 8%		
Sound power level (standard noise version) (4)	(dB(A))	100	102	102	102	103	103
Sound pressure level (standard noise version) (5)	(dB(A))	67	69	69	69	70	70
Sound power level (low noise version) (4)	(dB(A))	93	95	95	95	96	96
Sound pressure level (low noise version) (5)	(dB(A))	60	62	62	62	63	63
Weights and dimensions (operating)							
Length	(mm)	10056	10975	11894	12244	13163	14082
Width	(mm)	2250	2250	2250	2250	2250	2250
Height	(mm)	2530	2530	2530	2530	2530	2530
Weight	(kg)	9484	10180	10795	12217	13092	13784
Clearance A	(mm)	1000	1000	1000	1200	1200	1200
Clearance B	(mm)	1200	1200	1200	1200	1200	1200
Clearance C	(mm)	1200	1200	1200	1200	1200	1200
Clearance D	(mm)	1200	1200	1200	1200	1200	1200
Electrical data							
Maximum amps	(A)	675	761	858	962	1041	1138
Start-up amps	(A)	684	752	827	908	969	1044

- (1) With low and high ambient temperature option
(2) With 3 pass evaporator
(3) At Eurovent conditions: 12/7°C entering/leaving water temperature and 35°C ambient air temperature
(4) At Eurovent conditions, with 1pW reference sound power, according to ISO9614
(5) At 10 m in free field, calculated from the above sound power level according to the formula $L_p = L_w - 10 \log S$





RTAF

Air-cooled helical-rotary chiller Sintesis



Customer benefits

Probably the lowest Total Cost of Ownership thanks to:

- Low energy consumption: high full (EER) and part (ESEER) load efficiencies
- Silent operation: discreet, even in the most sound sensitive applications
- Unique feature: efficiency increases when sound decreases
- Reliability: main components designed and manufactured by Trane
- User-friendly control interface and interoperability with building automation systems
- Reduced refrigerant charge

Main features

- 5 efficiency levels: SE, HE, XE, HSE and HSS with increasing part load (ESEER) efficiencies
- 3 acoustic packages: SN, LN with no loss of efficiency; XLN with improved efficiency
- Trane Adaptive Frequency Drive on compressors on HSE/HSS versions
- Electronically Commutated condenser fans on XE, HSE and HSS versions
- New Trane patented flooded evaporator CHIL (Compact - High performance - Integrated design - Low charge)
- Microchannel condenser coils
- Wide operating map: air-side and water side

Options

- Integrated water pump: dual pump low or high head pressure
- Partial heat recovery
- Low temperature process cooling ($<4^{\circ}\text{C}$)
- Ice storage
- High ambient operation (55°C)
- Low ambient operation (-18°C)
- E-coated condenser coil
- Optiplant: unit sequencer

Accessories

- Flow-switch
- Elastomeric isolators

Controls

- Ultimate control: Trane UC800
 - Easy to read 7-inch color touchscreen display
 - Industry leading algorithms
 - Open protocol design
 - Adaptive control
- Feedforward adaptive control
- Softloading (HSE/HSS)
- Rapid restart
- SmartCom interface: LonTalk®, Modbus®, BACnet® communication capabilities
- Energy metering

This description may not include all options and accessories available. For full technical information, visit engineer.trane.com

Operating outdoor air temperature range (min./max.) (1)	(°C)	-18 / +55°C
Leaving water temperature range (min./max.) (2)	(°C)	-12 / 20°C
Power supply	(V/Ph/Hz)	400/3/50

RTAF Standard Efficiency - Standard and Low Noise		090	105	125	145	155	175	190	205
Cooling capacity (3)	(kW)	326.1	375.4	440.0	521.8	563.7	615.2	675.4	731.5
Total power input (3)	(kW)	103.8	121.2	145.5	165.3	184.3	206.4	221.1	243.7
EER (3)		3.14	3.10	3.02	3.16	3.06	2.98	3.05	3.00
ESEER (3)		3.86	3.86	3.94	3.91	3.84	3.95	3.92	3.92
Eurovent class		A	B	B	A	B	B	B	B
Sound power level (4)	(dBA)	95	95	95	96	96	97	97	97
Sound pressure level (5)	(dBA)	63	63	63	64	64	65	64	64
Sound power level (low noise) (4)	(dBA)	92	92	92	93	93	94	94	94
Sound pressure level (low noise) (5)	(dBA)	60	60	60	61	61	62	61	61
Number of circuit(s)		2	2	2	2	2	2	2	2
Number of compressors per circuit		1	1	1	1	1	1	1	1

Dimensions and weights (operating)

Length	(mm)	4520	4520	4520	5645	5645	5645	6770	6770
Width	(mm)	2200	2200	2200	2200	2200	2200	2200	2200
Height	(mm)	2526	2526	2526	2526	2526	2526	2526	2526
Clearance A	(mm)	1000	1000	1000	1000	1000	1000	1000	1000
Clearance B	(mm)	1000	1000	1000	1000	1000	1000	1000	1000
Clearance C	(mm)	1000	1000	1000	1000	1000	1000	1000	1000
Clearance D	(mm)	1000	1000	1000	1000	1000	1000	1000	1000
Weight	(kg)	3295	3315	3495	3990	4260	4405	4880	4995

Electrical data

Maximum amps	(A)	255	293	335	394	433	471	523	560
Start-up amps	(A)	302	357	436	495	527	591	643	680

RTAF Standard Efficiency - eXtra Low Noise		090	105	125	145	155	175	190	205
Cooling capacity (3)	(kW)	326.3	375.6	440.3	522.2	564.2	615.8	676.0	732.1
Total power input (3)	(kW)	101.2	118.6	142.9	162.0	181.0	203.1	217.1	239.7
EER (3)		3.23	3.17	3.08	3.22	3.12	3.03	3.11	3.05
ESEER (3)		4.13	4.07	4.06	4.12	4.02	4.08	4.04	4.01
Eurovent class		A	A	B	A	A	B	A	B
Sound power level (4)	(dBA)	88	89	89	89	90	90	91	91
Sound pressure level (5)	(dBA)	56	57	57	57	58	58	58	58
Number of circuit(s)		2	2	2	2	2	2	2	2
Number of compressors per circuit		1	1	1	1	1	1	1	1

Dimensions and weights (operating)

Length	(mm)	4520	4520	4520	5645	5645	5645	6770	6770
Width	(mm)	2200	2200	2200	2200	2200	2200	2200	2200
Height	(mm)	2672	2672	2672	2672	2672	2672	2672	2672
Clearance A	(mm)	1000	1000	1000	1000	1000	1000	1000	1000
Clearance B	(mm)	1000	1000	1000	1000	1000	1000	1000	1000
Clearance C	(mm)	1000	1000	1000	1000	1000	1000	1000	1000
Clearance D	(mm)	1000	1000	1000	1000	1000	1000	1000	1000
Weight	(kg)	3375	3395	3575	4090	4360	4505	5000	5115

Electrical data

Maximum amps	(A)	255	293	335	394	433	471	523	560
Start-up amps	(A)	302	357	436	495	527	591	643	680

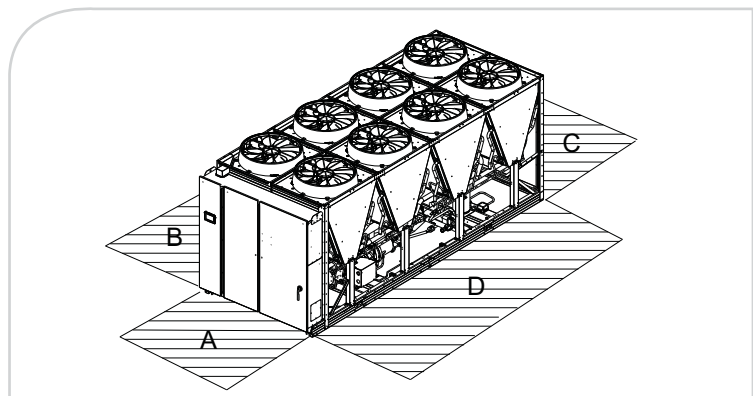
(1) With low ambient temperature option

(2) With process cooling option

(3) At Eurovent conditions: 12/7°C entering/leaving water temperature and 35°C ambient temperature according to EN 14-511

(4) At Eurovent conditions, with 1pW reference sound power, according to ISO9614

(5) Average at 10 meters in a free field. This is a non-contractual data, calculated from the above certified sound power level according to the formula $L_p = L_w - 10 \log 5$. This is an averaged value considering the unit as a parallelepipedic box with five exposed face areas.



Operating outdoor air temperature range (min./max.) (1)	(°C)	-18 / +55°C
Leaving water temperature range (min./max.) (2)	(°C)	-12 / 20°C
Power supply	(V/Ph/Hz)	400/3/50

RTAF High Efficiency - Standard and Low Noise		090	105	125	145	155	175	190	205
Cooling capacity (3)	(kW)	330.5	383.2	452.4	531.9	576.7	632.1	689.1	751.0
Total power input (3)	(kW)	104.7	120.6	142.6	163.7	181.4	201.3	217.4	238.7
EER (3)		3.16	3.18	3.17	3.25	3.18	3.14	3.17	3.15
ESEER (3)		3.70	3.75	3.94	4.01	3.94	3.97	3.94	3.96
Eurovent efficiency class cooling		A	A	A	A	A	A	A	A
Sound power level (4)	(dB(A))	95	95	96	96	97	97	98	98
Sound pressure level (5)	(dB(A))	63	63	64	64	65	65	65	65
Sound power level (low noise) (4)	(dB(A))	93	93	93	93	94	94	95	95
Sound pressure level (low noise) (5)	(dB(A))	61	61	61	61	62	62	62	62
Number of circuit(s)		2	2	2	2	2	2	2	2
Number of compressors per circuit		1	1	1	1	1	1	1	1
Dimensions and weights (operating)									
Length	(mm)	5645	5645	5645	6770	6770	6770	7895	7895
Width	(mm)	2200	2200	2200	2200	2200	2200	2200	2200
Height	(mm)	2526	2526	2526	2526	2526	2526	2526	2526
Clearance A	(mm)	1000	1000	1000	1000	1000	1000	1000	1000
Clearance B	(mm)	1000	1000	1000	1000	1000	1000	1000	1000
Clearance C	(mm)	1000	1000	1000	1000	1000	1000	1000	1000
Clearance D	(mm)	1000	1000	1000	1000	1000	1000	1000	1000
Weight	(kg)	3605	3625	3800	4310	4580	4730	5180	5295
Electrical data									
Maximum amps	(A)	263	301	343	401	440	478	531	568
Start-up amps	(A)	302	357	436	495	527	591	643	680

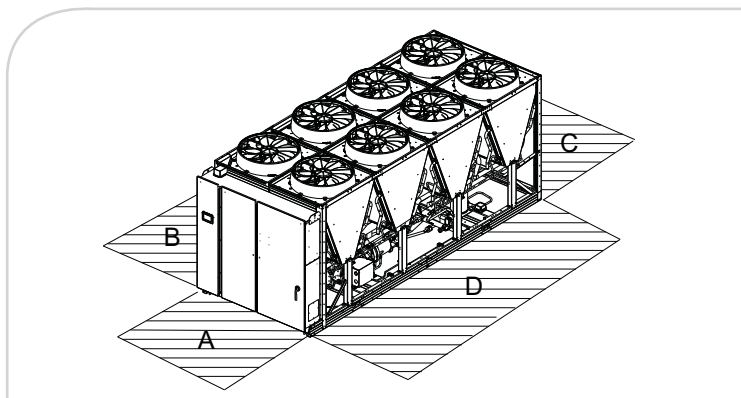
(1) With low ambient temperature option

(2) With process cooling option

(3) At Eurovent conditions: 12/7°C entering/leaving water temperature and 35°C ambient temperature according to EN 14-511

(4) At Eurovent conditions, with 1pW reference sound power, according to ISO9614

(5) Average at 10 meters in a free field. This is a non-contractual data, calculated from the above certified sound power level according to the formula $L_p = L_w - 10 \log S$. This is an averaged value considering the unit as a parallelepiped box with five exposed face areas.



Operating outdoor air temperature range (min./max.) (1)	(°C)	-18 / +55°C
Leaving water temperature range (min./max.) (2)	(°C)	-12 / 20°C
Power supply	(V/Ph/Hz)	400/3/50

RTAF eXtra Efficiency - Standard and Low Noise		090	105	125	145	155	175	190	205
Cooling capacity (3)	(kW)	326.1	380.3	447.2	526.3	569.4	632.8	689.7	751.9
Total power input (3)	(kW)	97.4	115.8	138.3	158.4	176.5	198.7	214.6	235.6
EER (3)		3.35	3.28	3.23	3.32	3.23	3.18	3.21	3.19
ESEER (3)		4.26	4.14	4.19	4.27	4.17	4.15	4.11	4.11
Eurovent efficiency class cooling		A	A	A	A	A	A	A	A
Sound power level (4)	(dBA)	94	94	95	96	97	97	98	98
Sound pressure level (5)	(dBA)	62	62	63	64	65	65	65	65
Sound power level (low noise) (4)	(dBA)	91	91	92	93	94	94	95	95
Sound pressure level (low noise) (5)	(dBA)	59	59	60	61	62	62	62	62
Number of circuit(s)		2	2	2	2	2	2	2	2
Number of compressors per circuit		1	1	1	1	1	1	1	1

Dimensions and weights (operating)

Length	(mm)	5645	5645	5645	6770	6770	6770	7895	7895
Width	(mm)	2200	2200	2200	2200	2200	2200	2200	2200
Height	(mm)	2526	2526	2526	2526	2526	2526	2526	2526
Clearance A	(mm)	1000	1000	1000	1000	1000	1000	1000	1000
Clearance B	(mm)	1000	1000	1000	1000	1000	1000	1000	1000
Clearance C	(mm)	1000	1000	1000	1000	1000	1000	1000	1000
Clearance D	(mm)	1000	1000	1000	1000	1000	1000	1000	1000
Weight	(kg)	3605	3625	3800	4310	4580	4730	5180	5295

Electrical data

Maximum amps	(A)	263	301	343	401	440	478	531	568
Start-up amps	(A)	310	365	444	502	534	598	651	688

RTAF eXtra Efficiency - eXtra Low Noise		090	105	125	145	155	175	190	205
Cooling capacity (3)	(kW)	325.5	379.9	446.7	525.7	568.6	632.5	689.4	751.6
Total power input (3)	(kW)	96.9	115.1	137.8	157.8	176.1	197.4	212.9	234.1
EER (3)		3.36	3.30	3.24	3.33	3.23	3.20	3.24	3.21
ESEER (3)		4.29	4.20	4.21	4.30	4.19	4.19	4.14	4.14
Eurovent efficiency class cooling		A	A	A	A	A	A	A	A
Sound power level (4)	(dBA)	88	88	88	89	90	90	91	91
Sound pressure level (5)	(dBA)	56	56	56	57	58	58	58	58
Number of circuit(s)		2	2	2	2	2	2	2	2
Number of compressors per circuit		1	1	1	1	1	1	1	1

Dimensions and weights (operating)

Length	(mm)	5645	5645	5645	6770	6770	6770	7895	7895
Width	(mm)	2200	2200	2200	2200	2200	2200	2200	2200
Height	(mm)	2672	2672	2672	2672	2672	2672	2672	2672
Clearance A	(mm)	1000	1000	1000	1000	1000	1000	1000	1000
Clearance B	(mm)	1000	1000	1000	1000	1000	1000	1000	1000
Clearance C	(mm)	1000	1000	1000	1000	1000	1000	1000	1000
Clearance D	(mm)	1000	1000	1000	1000	1000	1000	1000	1000
Weight	(kg)	3705	3725	3900	4430	4700	4850	5320	5435

Electrical data

Maximum amps	(A)	263	301	343	401	440	478	531	568
Start-up amps	(A)	310	365	444	502	534	598	651	688

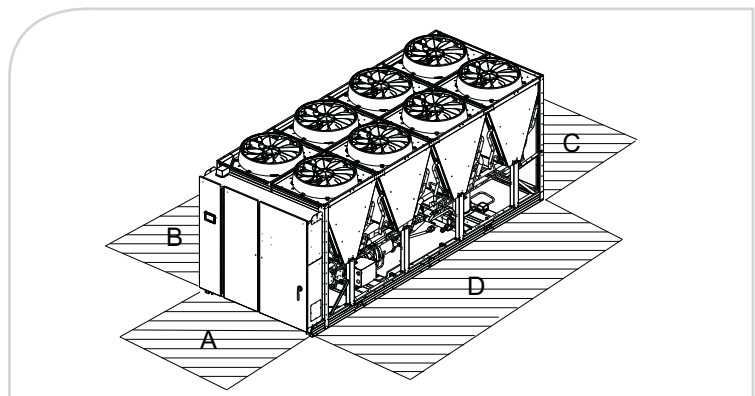
(1) With low ambient temperature option

(2) With process cooling option

(3) At Eurovent conditions: 12/7°C entering/leaving water temperature and 35°C ambient temperature according to EN 14-511

(4) At Eurovent conditions, with 1pW reference sound power, according to ISO9614

(5) Average at 10 meters in a free field. This is a non-contractual data, calculated from the above certified sound power level according to the formula $L_p = L_w - 10 \log S$. This is an averaged value considering the unit as a parallelepiped box with five exposed face areas.



Operating outdoor air temperature range (min./max.) (1)	(°C)	-18 / +55°C
Leaving water temperature range (min./max.) (2)	(°C)	-12 / 20°C
Power supply	(V/Ph/Hz)	400/3/50

RTAF High Seasonal Efficiency - Standard and Low Noise		090	105	125	145	155	175	190	205
Cooling capacity (3)	(kW)	330.0	383.0	452.0	534.0	576.0	638.0	695.0	755.0
Total power input (3)	(kW)	101.2	120.8	145.3	167.4	185.8	207.8	224.2	245.9
EER (3)		3.26	3.17	3.11	3.19	3.10	3.07	3.10	3.07
ESEER (3)		4.42	4.37	4.55	4.71	4.61	4.53	4.53	4.53
Eurovent efficiency class cooling		A	A	A	A	A	B	A	B
Sound power level (4)	(dB(A))	94	94	95	96	97	97	98	98
Sound pressure level (5)	(dB(A))	62	62	63	64	65	65	65	65
Sound power level (low noise) (4)	(dB(A))	91	91	92	93	94	94	95	95
Sound pressure level (low noise) (5)	(dB(A))	59	59	60	61	62	62	62	62
Number of circuit(s)		2	2	2	2	2	2	2	2
Number of compressors per circuit		1	1	1	1	1	1	1	1

Dimensions and weights (operating)

Length	(mm)	5645	5645	5645	6770	6770	6770	7895	7895
Width	(mm)	2200	2200	2200	2200	2200	2200	2200	2200
Height	(mm)	2526	2526	2526	2526	2526	2526	2526	2526
Clearance A	(mm)	1000	1000	1000	1000	1000	1000	1000	1000
Clearance B	(mm)	1000	1000	1000	1000	1000	1000	1000	1000
Clearance C	(mm)	1000	1000	1000	1000	1000	1000	1000	1000
Clearance D	(mm)	1000	1000	1000	1000	1000	1000	1000	1000
Weight	(kg)	3705	3765	3945	4450	4760	4915	5405	5520

Electrical data

Maximum amps	(A)	263	301	343	401	440	478	531	568
Start-up amps	(A)	263	301	343	401	440	478	531	568

RTAF High Seasonal Efficiency - eXtra Low Noise		090	105	125	145	155	175	190	205
Cooling capacity (3)	(kW)	330.0	383.0	451.0	533.0	575.0	638.0	694.0	755.0
Total power input (3)	(kW)	100.3	119.3	144.1	165.5	184.3	205.8	221.0	242.8
EER (3)		3.29	3.21	3.13	3.22	3.12	3.10	3.14	3.11
ESEER (3)		4.46	4.43	4.62	4.77	4.68	4.62	4.62	4.61
Eurovent efficiency class cooling		A	A	A	A	A	A	A	A
Sound power level (4)	(dB(A))	88	88	88	89	90	90	91	91
Sound pressure level (5)	(dB(A))	56	56	56	57	58	58	58	58
Number of circuit(s)		2	2	2	2	2	2	2	2
Number of compressors per circuit		1	1	1	1	1	1	1	1

Dimensions and weights (operating)

Length	(mm)	5645	5645	5645	6770	6770	6770	7895	7895
Width	(mm)	2200	2200	2200	2200	2200	2200	2200	2200
Height	(mm)	2672	2672	2672	2672	2672	2672	2672	2672
Clearance A	(mm)	1000	1000	1000	1000	1000	1000	1000	1000
Clearance B	(mm)	1000	1000	1000	1000	1000	1000	1000	1000
Clearance C	(mm)	1000	1000	1000	1000	1000	1000	1000	1000
Clearance D	(mm)	1000	1000	1000	1000	1000	1000	1000	1000
Weight	(kg)	3805	3865	4045	4570	4880	5035	5545	5660

Electrical data

Maximum amps	(A)	263	301	343	401	440	478	531	568
Start-up amps	(A)	263	301	343	401	440	478	531	568

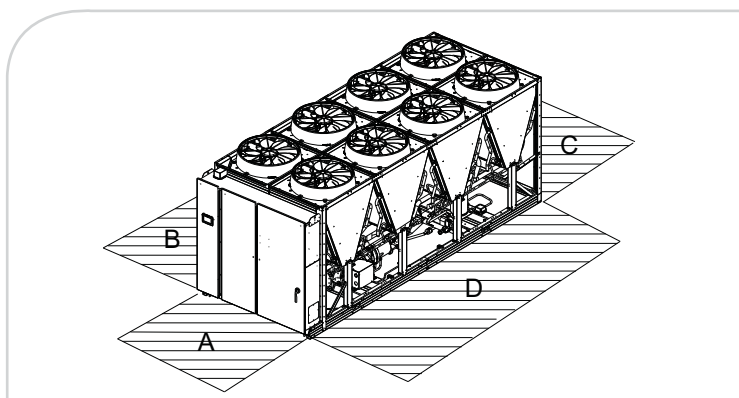
(1) With low ambient temperature option

(2) With process cooling option

(3) At Eurovent conditions: 12/7°C entering/leaving water temperature and 35°C ambient temperature according to EN 14-511

(4) At Eurovent conditions, with 1pW reference sound power, according to ISO9614

(5) Average at 10 meters in a free field. This is a non-contractual data, calculated from the above certified sound power level according to the formula $L_p = L_w - 10 \log S$. This is an averaged value considering the unit as a parallelepiped box with five exposed face areas.



SINTECIS



RTAF sizes 245-450

Up to 1600 kW of cooling capacity

Contact your local sales office for more information.



RTAE

Air-cooled helical-rotary chiller Stealth™



Customer benefits

- Low cost of ownership: High full (EER) and part load efficiencies (ESEER)
- Silent operation: high level of acoustic comfort.

Main features

- AdaptiSpeed™ Technology: permanent magnet motors powering the compressor and fans
- AFD3 Adaptive Frequency Drive – 30% TDD harmonic filtration
- 3 InvisiSound™ acoustic versions: Standard, Superior Sound Package and Ultimate
- New generation efficient water exchanger
- All aluminum condenser coils (aluminum fins and tubes)

Options

- Flow-switch
- Low temperature process cooling (<4°C)
- Ice storage
- High ambient operation (52°C)
- Low ambient operation (-18°C)
- Complete Coat™ epoxy coated condenser coil
- Architectural louvered panels

Accessories

- Elastomeric isolators

Controls

- Ultimate control: Trane UC800
 - Easy to read 7-inch color touchscreen display
 - Industry leading algorithms
 - Open protocol design
 - Adaptive control
- Feedforward adaptive control
- Softloading
- Rapid restart
- Adaptispeed Control
- Variable-Primary Flow (VPF) compatible

This description may not include all options and accessories available. For full technical information, visit engineer.trane.com

Operating outdoor air temperature range (min./max.) (1)	(°C)	-18 / +52°C
Leaving water temperature range (min./max.) (2)	(°C)	-7 / 20°C
Power supply	(V/Ph/Hz)	400/3/50

RTAE Standard Sound Package		150	165	180	200	225	250	275	300
Cooling capacity (3)	(kW)	514.4	579.4	623.6	695.8	784.2	879.0	961.2	1061.8
Total power input (3)	(kW)	154.9	171.9	187.8	207.7	224.7	262.4	281.9	314.2
EER		3.32	3.37	3.32	3.35	3.49	3.35	3.41	3.38
Eurovent class		A	A	A	A	A	A	A	A
ESEER		4.54	4.61	4.60	4.70	4.87	4.82	4.94	5.00
Sound power level (4)	dB(A)	100.0	100.0	100.0	100.0	100.0	102.0	101.0	102.0
Sound pressure level (5)	dB(A)	67.5	67.4	67.4	67.2	67.2	69.2	68.1	68.9

RTAE InvisiSound Superior Sound Package		150	165	180	200	225	250	275	300
Cooling capacity (3)	(kW)	508.8	574.9	617.7	692.3	775.8	867.5	950.1	1051.0
Total power input (3)	(kW)	154.7	170.6	187.2	206.7	224.2	263.7	281.9	312.8
EER		3.29	3.37	3.30	3.35	3.46	3.29	3.37	3.36
Eurovent class		A	A	A	A	A	A	A	A
ESEER		4.55	4.62	4.61	4.71	4.88	4.83	4.95	5.01
Sound power level (4)	dB(A)	96.0	97.0	97.0	97.0	97.0	98.0	98.0	98.0
Sound pressure level (5)	dB(A)	63.5	64.4	64.4	64.2	64.2	65.2	65.1	64.9

RTAE InvisiSound Ultimate Sound Package		150	165	180	200	225	250	275	300
700 RPM									
Cooling capacity (3)	(kW)	498.4	565.5	605.9	681.6	759.8	845.2	928.8	1030.1
Total power input (3)	(kW)	156.7	171.4	189.3	207.8	227.5	270.0	286.7	317.9
EER		3.18	3.30	3.20	3.28	3.34	3.13	3.24	3.24
Eurovent class		A	A	A	A	A	A	A	A
ESEER		4.56	4.63	4.62	4.72	4.89	4.84	4.96	5.03
Sound power level (4)	dB(A)	91.0	91.0	91.0	92.0	92.0	92.0	94.0	94.0
Sound pressure level (5)	dB(A)	58.5	58.4	58.4	59.2	59.2	59.2	61.1	60.9
650 RPM									
Cooling capacity (3)	(kW)	492.8	560.3	599.6	675.3	751.1	833.4	917.0	1018.3
Total power input (3)	(kW)	159.0	172.9	191.0	209.7	230.4	275.0	291.1	321.2
EER		3.10	3.24	3.14	3.22	3.26	3.03	3.15	3.17
Eurovent class		B	A	A	A	A	B	A	A
ESEER		4.55	4.63	4.62	4.72	4.89	4.83	4.96	5.03
Sound power level (4)	dB(A)	90.0	89.0	89.0	90.0	90.0	91.0	92.0	92.0
Sound pressure level (5)	dB(A)	57.5	56.4	56.4	57.2	57.2	58.2	59.1	58.9
600 RPM									
Cooling capacity (3)	(kW)	485.5	554.0	591.6	667.6	740.3	818.4	902.7	1003.6
Total power input (3)	(kW)	161.8	175.3	194.6	212.6	235.0	281.2	296.9	326.9
EER		3.00	3.16	3.04	3.14	3.15	2.91	3.04	3.07
Eurovent class		B	A	B	A	A	B	B	B
ESEER		4.54	4.63	4.62	4.72	4.88	4.82	4.95	5.02
Sound power level (4)	dB(A)	89.0	88.0	88.0	88.0	89.0	89.0	92.0	91.0
Sound pressure level (5)	dB(A)	56.5	55.4	55.4	55.2	56.2	56.2	59.1	57.9

(1) With low and high ambient temperature option

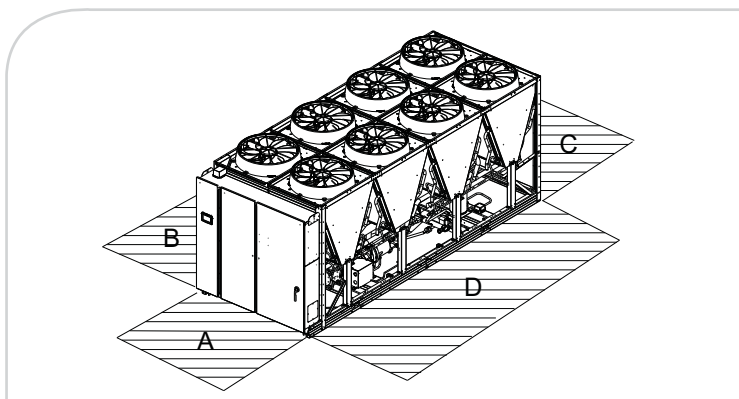
(2) With 2 pass evaporator

(3) At Eurovent conditions: 12/7°C entering/leaving water temperature and 35°C ambient temperature according to EN 14-511

(4) At Eurovent conditions, with 1pW reference sound power, according to ISO9614

(5) Average at 10 meters in a free field. This is a non-contractual data, calculated from the above certified sound power level according to the formula $L_p = L_w - 10 \log S$. This is an averaged value considering the unit as a parallelepiped box with five exposed face areas.

RTAE		150	165	180	200	225	250	275	300
Number of refrigerant circuits					2				
Number of compressors					2				
Dimensions and weights (operating)									
Length	(mm)	5853	7204	7204	8555	8555	8555	9906	11258
Width	(mm)	2230	2230	2230	2230	2230	2230	2230	2230
Height	(mm)	2432	2432	2432	2432	2432	2432	2432	2432
Weight standard and superior	(kg)	5207	5685	5842	6353	7015	7194	7754	8285
Weight ultimate	(kg)	5570	6048	6205	6716	7378	7557	8117	8648
Clearance A	(mm)				1016				
Clearance B	(mm)				914				
Clearance C	(mm)				600				
Clearance D	(mm)				2160				
Electrical data									
Maximum amps	(A)	350	372	405	440	455	523	563	610







CGCL

Air-cooled scroll chiller



Customer benefits

- Indoor installation:
 - Allows installation in existing buildings, with limited roof or external surface available
 - Easy maintenance
 - No sound radiation outside of technical room
 - Possibility of heat reclaim
- Minimum maintenance requirements

Main features

- Scroll compressors
 - Hermetic, high efficiency, low vibration, low sound level
 - Full internal protections, internal temperature and bypass valve
- External sheet metal parts are galvanized and finished with powder paint RAL 9002
- Access panels are quickly removable using a square key
- Vertical or horizontal condenser fan discharge
- Compact - fits through standard 860 mm door width (except size 500 and 600)
- Up to 500 Pa total static pressure at the fan

Options

- Phase and unbalance detection
- Control of the condenser leaving water temperature
- Evaporator water pump command - single or double
- External linear reset, auxiliary and external water setpoint
- Low ambient operation (-10°C)
- Ice making and compressor kW limiting
- Compressor sound attenuating jacket
- High and low pressure gauges
- Four programmable relays for remote unit status
- Water filter
- Filter box fitted with A150/AR300/M8 filters
- Hydraulic module - for information, contact your local sales office

Tracer™ CH530 Control

Adaptive Control™ microprocessor featuring:

- Easy-to-use operator interface panel
- Ice-making card (optional)
- LonTalk® or Modbus® communication capabilities (optional)
- Alarm indicator programmable relays (optional)
- Leaving condenser water temperature control (optional)

This description may not include all options and accessories available. For full technical information, visit engineer.trane.com

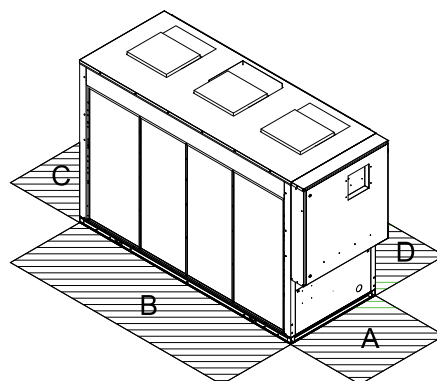
Operating outdoor air temperature range (min./max.)	(°C)	-5 / +40
Leaving water temperature range (min./max.)	(°C)	-12 / +12
Power supply	(V/Ph/Hz)	400/3/50

CGCL		200	250	300	350	400	450	500	600
Net cooling capacity (2)	(kW)	50.7	64.6	74.9	89.1	101.3	112.6	128.6	154.5
Total power input in cooling net	(kW)	21.8	23.7	33.6	36.5	46.3	53.9	53.4	69.9
EER net		2.33	2.73	2.23	2.44	2.19	2.1	2.4	2.2
Eurovent class		E	C	F	E	F	G	E	F
ESEER net		3.42	4.64	3.38	3.98	3.53	3.8	3.8	3.0
Number of refrigerant circuits		1	1	1	1	1	1	2	2
Number of compressors / capacity steps		2 / 2	2 / 2	2 / 2	3 / 2	3 / 2	3 / 2	4 / 4	4 / 4
Sound power level (3)	(dB(A))	91	82	88	91	94	97	93	97
Weights and dimensions (operating)									
Length	(mm)	2268	2268	2268	3230	3230	3230	3230	3230
Width	(mm)	866	866	866	866	866	866	1216	1216
Height	(mm)	1997	1997	1997	1997	1997	1997	1997	1997
Weight	(kg)	710	830	890	1080	1140	1200	1380	1500
Clearance A	(mm)	800							
Clearance B	(mm)	800	800	800	800	800	800	1200	1200
Clearance C	(mm)	800							
Clearance D	(mm)	800							
Electrical data									
Maximum amps	(A)	48.0	61.0	77.0	86.0	102.0	118.0	121.0	151.0
Start-up amps	(A)	148	205	219	232	243	260	265	295

(1) At Eurovent conditions: 12/7°C entering/leaving water temperature and 35°C ambient air temperature

(2) At Eurovent conditions: water 12/7°C; air 35°C - according to EN 14-511

(3) At 300 Pa ESP





CGWH CCUH

Water-cooled packaged and condenserless scroll chillers



Customer benefits

- High performance chiller
- Indoor installation: easy maintenance
- Minimum maintenance requirements

Range description

CGWH: packaged chiller

CCUH: condenserless chiller

Main features

- High efficiency hermetic scroll compressors with low vibration and sound levels and full internal overheating protection
- External sheet metal parts are galvanized and finished with powder paint RAL 9002
- Access panels are quickly removable using a square key
- Designed for indoor installation
- Maximum condenser leaving water temperature: 50°C
- 380, 400 and 415V power voltage
- Phase and unbalance detection
- 400/220V transformer for the control

Options

- Compressor sound attenuating jackets
- High and low pressure gauges
- Evaporator water pump command - single or double
- Water filter
- Hydraulic module - for information, contact your local sales office

Tracer™ CH530 Control

Adaptive Control™ microprocessor-based control featuring:

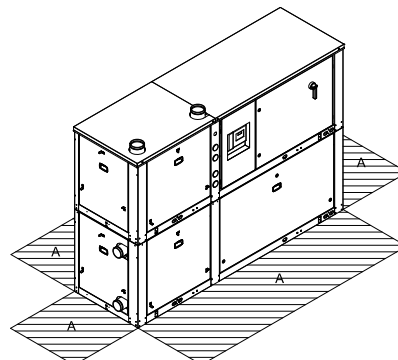
- Easy-to-use operator interface
- External linear reset, auxiliary and external water setpoint
- Compressor kW limiting (optional)
- Alarm indicator programmable relays (options)
- Ice making controls (optional)
- LonTalk® or Modbus® communication interface (optional)
- Leaving condenser water temperature control (optional)

This description may not include all options and accessories available. For full technical information, visit engineer.trane.com

Condenser leaving water temperature (min./max.)	(°C)	20/50
Condenser saturated discharge temperature (min./max.)	(°C)	25/55
Evaporator leaving water temperature range (min./max.)	(°C)	-12 / +12
Power supply	(V/Ph/Hz)	400/3/50

CGWH/CCUH		115	120	125	225	230	235	240	250
Net cooling capacity CGWH (1) (4)	(kW)	51.4	64.5	77.5	91.5	103.8	116.7	128.8	156.1
Net power input CGWH (1) (4)	(kW)	14.6	18.6	22.5	25.6	29.5	33	37.1	44.3
Net EER / Eurovent class CGWH (1) (4)		3.52/E	3.48/E	3.45/E	3.57/E	3.52/E	3.54/E	3.47/E	3.52/E
Net ESEER CGWH (5)		4.06	4.22	3.92	4.17	4.02	3.69	3.67	3.41
Number of refrigerant circuits		1	1	1	2	2	2	2	2
Number of compressors / capacity steps		2	2	2	3	3	3	4	4
Sound power level CGWH only (3)		75	79	81	81	82	83	82	84
Weights and dimensions CGWH (operating)									
Length	(mm)	1101	1101	1101	2072	2100	2135	2145	2082
Width	(mm)	800	800	800	866	866	866	866	866
Height	(mm)	1545	1545	1545	1545	1545	1545	1545	1545
Weight	(kg)	412	444	476	668	702	739	803	873
Clearance A	(mm)	800							
Electrical data CGWH									
Nominal amps	(A)	41	52	63	72	83	94	103	125
Start-up amps	(A)	140	194	204	212	222	232	241	261

- (1) Evaporator 12/7°C and 0.044m2K/kW, and condenser at 30/35°C and 0.044m2K/kW
(2) Evaporator 12/7°C and 0.044m2K/kW, and condenser 45°C saturating subcooling 5K
(3) At full load and in accordance with ISO9614
(4) Net performances calculated as per EN14511-2011





CGWN CCUN

Water-cooled packaged and condenserless scroll chillers



Customer benefits

- Compact chiller with packaged hydraulic module (available as an option) for easier and faster installation
- Wide application flexibility for comfort and process applications: fits your exact requirements
- State of the art control to guarantee superior dependability: lower cost of ownership

Range description

CGWN: packaged chiller

CCUN: condenserless chiller

Main features

- High efficiency hermetic scroll compressors with low vibration and sound levels and full internal overheating protections
- External sheet metal parts are galvanized and finished with powder paint RAL 9002
- Access panels are quickly removable using a square key and mounted handles
- Designed for indoor and outdoor installation
- Maximum condenser leaving water temperature: 60°C (R410A)
- 380, 400 and 415V power voltage
- 400/110V transformer for the control
- Phase & unbalanced detection

Options

- High efficiency version
- Soft starter
- Evaporator + water pump command - single or double
- Condenser + water pump command - single or double
- Compressor sound attenuating jackets
- High and low pressure gauges
- Hydraulic module including:
 - Single or dual evaporator pump including water filter and pressure tabs
 - Speed inverter condenser pumps including flow control, condenser return and leaving water temperature
 - Combinations of hydraulic modules available: evaporator only, condenser only or both

Tracer™ CH530 Control

Adaptive Control™ microprocessor-based control featuring:

- Easy-to-use operator interface
- External linear reset, auxiliary and external water setpoint
- Compressor kW limiting (optional)
- Alarm indicator programmable relays (options)
- Ice making controls (optional)
- LonTalk®, Modbus®, BACnet® communication interface (optional)
- Leaving condenser water temperature control (optional)

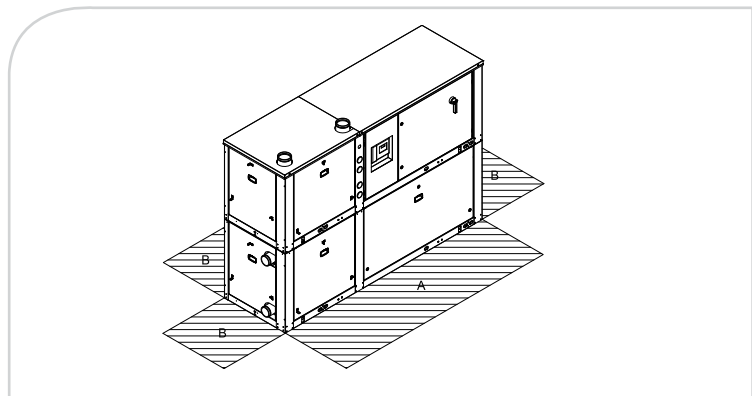
This description may not include all options and accessories available. For full technical information, visit engineer.trane.com

Condenser leaving water temperature (min./max.)	(°C)	25/60
Condenser saturated discharge temperature (min./max.)	(°C)	25/60
Evaporator leaving water temperature range (min./max.)	(°C)	-12 / +15
Power supply	(V/Ph/Hz)	400/3/50

CGWN/CCUN		205	205HE	206	206HE	207	207HE	208	209	210	211
Net cooling capacity CGWN (1) (4)	(kW)	181.6	192.7	215.9	226.6	250.5	261.5	282	311	340.5	372.1
Net power input CGWN (1) (4)	(kW)	44.6	41.4	52.7	49.7	60.4	57.7	63.9	72.9	81.7	89.8
Net EER / Eurovent class CGWN (1) (4)		4.07/C	4.65/C	4.09/C	4.56/C	4.15/C	4.53/C	4.41/C	4.27/C	4.17/C	4.14/C
Net ESEER CGWN (4)		5.12	5.78	5.13	5.63	5.24	5.71	5.53	5.17	5.05	5.14
Refrigerant		R410A									
Number of refrigerant circuits		2									
Number of compressors / capacity steps		4									
Sound power level CGWN (3)	(dB(A))	82	82	82	82	83	83	83	84	84	84
Weights and dimensions (operating) (5)											
Length	(mm)	2545	2545	2545	2545	2545	2545	2545	2545	2545	2545
Width	(mm)	880	880	880	880	880	880	880	880	880	880
Height	(mm)	1842	1842	1842	1842	1842	1842	1842	1842	1842	1842
Weight	(kg)	1360	1460	1300	1450	1420	1470	1500	1650	1710	1790
Clearance A	(mm)	1000									
Clearance B	(mm)	800									
Electrical data											
Nominal amps	(A)	137	137	159	159	187	187	210	233	250	263
Start-up amps	(A)	278	278	334	334	395	395	418	441	512	525

CGWN/CCUN		212	213	214	215
Net cooling capacity CGWN (1) (4)	(kW)	397.1	429.6	464.1	504.4
Net power input CGWN (1) (4)	(kW)	101	110.8	121.9	130.3
Net EER / Eurovent class CGWN (1) (4)		3.93/D	3.88/D	3.81/E	3.87/D
Net ESEER CGWN (4)		4.66	4.1	4.14	4.17
Refrigerant		R407C			
Number of refrigerant circuits		2			
Number of compressors / capacity steps		5	6	6	6
Sound power level CGWN (3)	(dB(A))	87	88	88	90
Weights and dimensions (operating) (5)					
Length	(mm)	2866	2866	2866	2866
Width	(mm)	878	878	878	878
Height	(mm)	2025	2025	2025	2025
Weight	(kg)	2233	2443	2524	2639
Clearance A	(mm)	1000			
Clearance B	(mm)	800			
Electrical data					
Nominal amps	(A)	311	337	370	400
Start-up amps	(A)	563	588	621	655

- (1) Evaporator 12/7°C and 0.044m2K/kW, and condenser at 30/35°C and 0.044m2K/kW
 (2) Evaporator 12/7°C and 0.044m2K/kW, and condenser 45°C saturating subcooling 5K
 (3) At full load and in accordance with ISO9614 and without compressor enclosure
 (4) Net performances calculated as per EN14511-2011
 (5) Without hydraulic module





RTWD – RTUD

Water-cooled packaged and condenserless helical-rotary chiller Series R™



Customer benefits

High performance chiller based on:

- Falling film evaporator: higher performances with lower refrigerant charge
- State-of-the-art control to guarantee superior dependability and low cost of ownership

Range description

RTWD: packaged chiller

RTUD: condenserless chiller

Main features

- Low-speed, direct-drive semi-hermetic helical rotary compressor featuring only 3 moving parts, suction-gas-cooled motor
- Fully modulating load control (15-100%)
- 3 different levels of efficiency
- Control of the leaving condenser water temperature from CH530
- Maximum condenser temperature 60°C
- Compact physical footprint - fits through standard single-width door
- Bolt-together construction for easy unit disassembly
- Simplified piping - the only piping required is for the evaporator and condenser connections
- Single power connection - reduced wiring costs
- Factory-mounted star-delta starter panel

Tracer™ CH530 Control

Adaptive Control™ microprocessor-based control featuring:

- Easy-to-use operator interface
- Chilled water pump control

Control options:

- Control of the leaving condenser water temperature
- Programmable relays
- Reset of setpoints by analog signal
- Condenser refrigerant pressure output
- LonTalk®, BACnet®, Modbus® communication interfaces

This description may not include all options and accessories available. For full technical information, visit engineer.trane.com

Condenser leaving water temperature (min./max.) RTWD	(°C)	20/60
Condenser saturated discharge temperature (min./max.) RTUD	(°C)	20/67
Evaporator leaving water temperature range (min./max.)	(°C)	-8 / +18
Power supply	(V/Ph/Hz)	400/3/50

RTWD/RTUD		60HE	70HE	80HE	90HE	100HE	110HE	120HE	130HE	140HE	160HE
Net cooling capacity RTWD (1) (5)	(kW)	235	276	317	365	390	417	452	488	531	579
Net power input RTWD (1) (5)	(kW)	48	57	65	74	79	84	91	99	107	114
Net EER / Eurovent class RTWD (1) (5)		4.93/B	4.88/B	4.85/B	4.90/B	4.95/B	4.99/B	4.97/B	4.95/B	4.98/B	5.05/A
Net ESEER RTWD (5)		5.73	5.61	5.76	5.67	5.75	5.67	5.75	5.63	5.73	5.74
Number of refrigerant circuits		2									
Number of compressors		2									
Sound power level RTWD (3)	dB(A)	90	90	97	99	99	99	98	96	96	96
Weights and dimensions (operating) (6)											
Length	(mm)	3210	3210	3210	3230	3320	3230	3240	3400	3400	3400
Width	(mm)	1070	1070	1070	1060	1060	1060	1060	1280	1280	1280
Height	(mm)	1940	1940	1940	1960	1960	1960	1960	1950	1950	1950
Weight	(kg)	2650	2658	2673	2928	2970	3008	3198	3771	3802	3874
Clearance A	(mm)	920									
Clearance B	(mm)	920	920	920	920	920	920	920	920	920	1020
Electrical data											
Maximum amps	(A)	102	124	142	161	176	192	209	227	244	261
Start-up amps (4)	(A)	152	177	192	206	242	254	291	304	346	359

RTWD/RTUD		180HE	200HE	220HE	250HE	160PE	180PE	200PE	160SE	170SE	190SE	200SE
Net cooling capacity RTWD (1) (5)	(kW)	637.9	700.1	765	836	598	659	709	582	642	700	769
Net power input RTWD (1) (5)	(kW)	127.1	138.7	155	168	114	126	136	133	149	161	174
Net EER / Eurovent class RTWD (1) (5)		4.99/B	5.03/B	4.94/B	4.97/B	5.26/A	5.24/A	5.22/A	4.37/C	4.31/C	4.35/C	4.41/C
Net ESEER RTWD (5)		5.79	5.77	5.69	5.69	5.95	6.09	6.11	5.09	4.96	5.04	5.08
Number of refrigerant circuits		2										
Number of compressors		2										
Sound power level RTWD (3)	dB(A)	101	101	101	101	96	101	101	101	101	101	101
Weights and dimensions (operating) (6)												
Length	(mm)	3490	3490	3490	3490	3760	3810	3490	3490	3490	3490	3490
Width	(mm)	1310	1310	1310	1310	1280	1310	1310	1310	1310	1310	1310
Height	(mm)	1970	2010	2010	2010	2010	2010	2010	1970	1970	1970	1970
Weight	(kg)	4042	4488	4504	4579	4172	4408	4625	3874	4049	4086	4125
Clearance A	(mm)	920										
Clearance B	(mm)	1020	1020	1020	1020	1020	1020	1020	1020	1020	1020	1020
Electrical data												
Maximum amps	(A)	286	311	343	374	261	286	311	286	311	343	374
Start-up amps (4)	(A)	391	410	473	497	359	391	410	391	410	473	497

(1) Evaporator 12/7°C and 0.0176 m2K/kW, and condenser at 30/35°C and 0.044m2K/kW

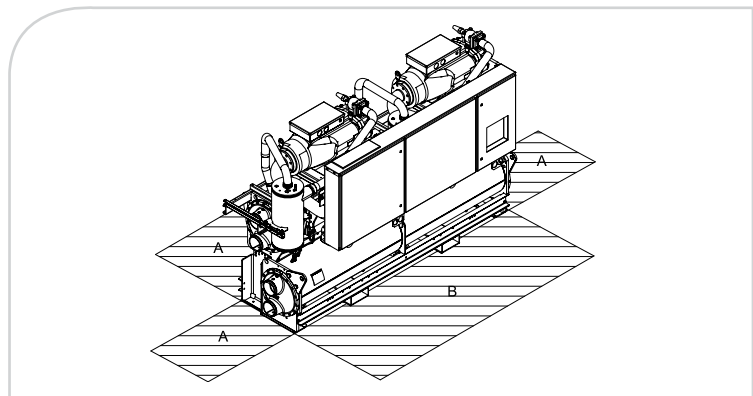
(2) Evaporator 12/7°C and 0.0176m2K/kW, and condenser 45°C saturating subcooling 5K

(3) At full load and in accordance with ISO9614 without sound attenuating enclosure

(4) Inrush current in star connection

(5) Net performances calculated as per EN14511-2011

(6) Maximum dimensions and weight for this size





RTHD^{evo}

Water-cooled packaged helical-rotary chiller Series R™



Customer benefits

Industry leading efficiencies thanks to:

- Falling film evaporator: superior performances with low refrigerant charge
- New Trane control for optimal system reliability and human interface
- Trane helical-rotary compressor - designed to perform, built to last
- New optional Trane Adaptive Frequency Drive (AFD) for part load efficiency enhancement

Main features

- 4 efficiency levels: SE, HE, XE and new HSE fitted with Trane AFD with enhanced part load (ESEER) efficiencies
- Low-speed, direct-drive semi-hermetic helical rotary compressor featuring only 3 moving parts, suction-gas-cooled motor
- Fully modulating load control (15-100%)
- Compact physical footprint - fits through standard double-width doors
- Bolt-together construction for easy unit disassembly
- Factory-mounted star-delta starter panel
- Simplified piping - the only piping required is for the evaporator and condenser grooved pipe connections
- Single power connection - reduced wiring costs

Options

- Insulation on evaporator, water boxes, suction line, motor housing
- Fused or non-fused power disconnect switch
- Under/over voltage protection

Accessories

- Outside air temperature sensor
- Condenser valves

Control

- Ultimate control: UC800
 - Easy to read 7-inch color touchscreen display
 - Industry leading algorithms
 - Open protocol design
 - Adaptive control
- Feedforward adaptive control
- Softloading (HSE)
- Rapid Restart
- SmartCom interface: LonTalk®, BACnet®, Modbus® communication interfaces
- Energy metering

This description may not include all options and accessories available. For full technical information, visit engineer.trane.com

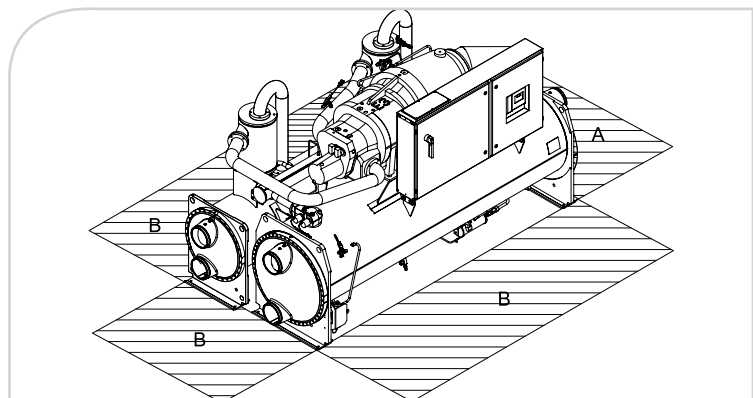
Condenser leaving water temperature (min./max.)	(°C)	20 / +50
Evaporator leaving water temperature range (min./max.)	(°C)	-12 / +18
Power supply	(V/Ph/Hz)	400/3/50

RTHD Standard Efficiency		225	250	300	325	350	375
Cooling capacity (1)	(kW)	769	886	1050	1145	1216	1342
Total power input (1)	(kW)	149	176	209	221	240	279
EER (1)		5.16	5.03	5.03	5.18	5.06	4.81
ESEER (1)		5.41	5.36	5.09	5.41	5.31	4.93
Eurovent class		A	B	B	A	A	B
Sound power level (2)	(dBA)	98	98	97	97	97	101
Number of circuit(s)		1	1	1	1	1	1
Number of compressors per circuit		1	1	1	1	1	1
Dimensions and weights (operating)							
Length	(mm)	3290	3290	3290	3290	3290	3290
Width	(mm)	1600	1600	1600	1600	1600	1600
Height	(mm)	1940	1940	1940	1940	1940	1940
Clearance A	(mm)	2510	2510	2510	2510	2510	2510
Clearance B	(mm)	1000	1000	1000	1000	1000	1000
Weight	(kg)	5891	6833	6335	6522	6553	6655
Electrical data							
Maximum amps	(A)	349	349	455	455	455	488
Start-up amps	(A)	480	480	748	748	748	748

RTHD High Efficiency		150	175	225	250	300	350	375	400
Cooling capacity (1)	(kW)	545	595	778	896	1074	1195	1278	1411
Total power input (1)	(kW)	99	109	145	170	198	212	228	266
EER (1)		5.49	5.44	5.37	5.26	5.42	5.65	5.60	5.31
ESEER (1)		5.79	5.88	5.68	5.66	5.63	5.88	5.78	5.38
Eurovent class		A	A	A	A	A	A	A	A
Sound power level (2)	(dBA)	98	98	98	98	97	97	97	101
Number of circuit(s)		1	1	1	1	1	1	1	1
Number of compressors per circuit		1	1	1	1	1	1	1	1
Dimensions and weights (operating)									
Length	(mm)	3170	3170	3290	3290	3290	3690	3690	3690
Width	(mm)	1600	1600	1600	1600	1600	1600	1600	1600
Height	(mm)	1850	1850	1940	1940	1940	1940	1940	1940
Clearance A	(mm)	2530	2530	2510	2510	2510	2970	2970	2970
Clearance B	(mm)	1000	1000	1000	1000	1000	1000	1000	1000
Weight	(kg)	4361	4361	6030	6030	6612	7558	7589	7767
Electrical data									
Maximum amps	(A)	233	233	349	349	455	455	455	488
Start-up amps	(A)	412	412	480	480	748	748	748	748

(1) At Eurovent conditions: evaporator 12/7°C and 0,0176m2K/kW, condenser 30/35°C and 0,44m2K/kW according to EN 14-511

(2) At full load according to ISO9614



Condenser leaving water temperature (min./max.)	(°C)	20 / +50
Evaporator leaving water temperature range (min./max.)	(°C)	-12 / +18
Power supply	(V/Ph/Hz)	400/3/50

RTHD eXtra High Efficiency		150	175	225	275	325	350	375	425
Cooling capacity (1)	(kW)	559	614	797	937	1119	1203	1294	1453
Total power input (1)	(kW)	98	108	140	160	188	205	218	253
EER (1)		5.69	5.69	5.68	5.86	5.94	5.88	5.94	5.74
ESEER (1)		5.95	6.09	6.09	6.27	6.16	6.21	6.21	5.91
Eurovent class		A	A	A	A	A	A	A	A
Sound power level (2)	(dBA)	98	98	98	98	97	97	97	101
Number of circuit(s)		1	1	1	1	1	1	1	1
Number of compressors per circuit		1	1	1	1	1	1	1	1

Dimensions and weights (operating)

Length	(mm)	3640	3640	3290	3670	3850	3850	3850	3850
Width	(mm)	1600	1600	1600	1600	1800	1800	1800	1800
Height	(mm)	1850	1850	1940	1940	2035	2040	2040	2040
Clearance A	(mm)	2990	2990	2510	2980	3130	3130	3130	3130
Clearance B	(mm)	1000	1000	1000	1000	1000	1000	1000	1000
Weight	(kg)	4756	4756	6355	6833	8951	9196	9384	9741

Electrical data

Maximum amps	(A)	233	233	349	349	455	455	455	488
Start-up amps	(A)	412	412	480	480	748	748	748	748

RTHD High Seasonal Efficiency		150	175	225	275	325	350	375	425
Cooling capacity (1)	(kW)	559	614	797	937	1119	1203	1294	1453
Total power input (1)	(kW)	102	111	145	165	195	211	225	261
EER (1)		5.51	5.51	5.50	5.68	5.75	5.69	5.75	5.56
ESEER (1)		7.14	7.20	7.32	7.61	7.71	7.52	7.94	7.83
Eurovent class		A	A	A	A	A	A	A	A
Sound power level (2)	(dBA)	98	98	98	98	97	97	97	101
Number of circuit(s)		1	1	1	1	1	1	1	1
Number of compressors per circuit		1	1	1	1	1	1	1	1

Dimensions and weights (operating)

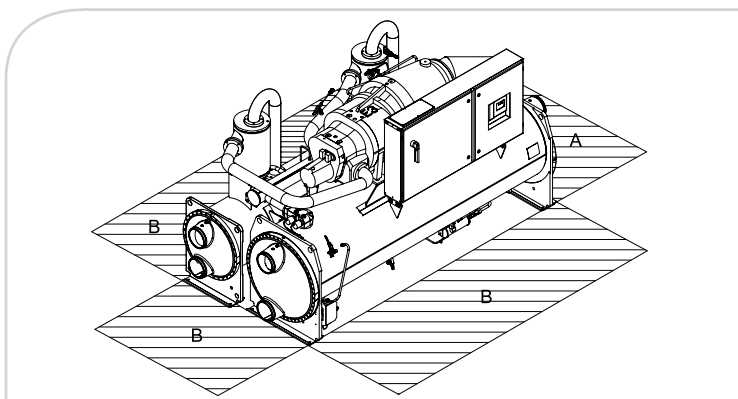
Length	(mm)	3640	3640	3290	3670	3850	3850	3850	3850
Width	(mm)	1850	1850	1970	1970	2040	2040	2040	2040
Height	(mm)	1690	1690	1810	1810	2000	2000	2000	2000
Clearance A	(mm)	2990	2990	2510	2980	3130	3130	3130	3130
Clearance B	(mm)	1000	1000	1000	1000	1000	1000	1000	1000
Weight	(kg)	4860	4860	6534	7012	9139	9384	9572	9929

Electrical data

Maximum amps	(A)	218	218	314	314	421	421	421	452
Start-up amps	(A)	< I max.	< I max.	< I max.	< I max.	< I max.	< I max.	< I max.	< I max.

(1) At Eurovent conditions: evaporator 12/7°C and 0,0176m2K/kW, condenser 30/35°C and 0,44m2K/kW according to EN 14-511

(2) At full load according to ISO9614







CVGF

Water-cooled centrifugal packaged chiller CenTraVac™



Customer benefits

Chiller providing excellent performance thanks to:

- Hermetic, multistage Trane centrifugal compressor offering both wide operating range and extended part load capability- minimum maintenance requirements- no extra ventilation required to cool compressor motor
- State of the art control to guarantee superior dependability: low cost of ownership

Main features

- Hermetic two-stage centrifugal compressor-motor assembly with integral lubrication system and economizer cycle
- Liquid cooled hermetic induction motor
- Advanced motor protection
- Hundreds of evaporator-condenser-compressor combinations available, permitting precise tailoring to system requirements
- Single power connection - reduce wiring costs
- Factory-mounted star-delta starter panel
- Prewired instrument and control panel

Options

- Solid-state starters
- Marine waterboxes (10.5 or 21 bar) evaporator and condenser
- Cold parts thermal insulation

Accessories

- Flanged adaptors
- Flow switch(es)

Tracer™ AdaptiView Control

- Touchscreen color display, allowing intuitive navigation through reports and graphs
- Adaptive Control™ logic
- LonTalk®, BACnet®, Modbus® communication interfaces (optional)

This description may not include all options and accessories available. For full technical information, visit engineer.trane.com

Condenser leaving water temperature (min./max.)	(°C)	15/50
Evaporator leaving water temperature range (min./max.)	(°C)	-2 / +16
Power supply	(V/Ph/Hz)	400/3/50

CVGF		400	500	650	800	1000
Minimum cooling capacity (1)	(kW)	1250	1300	2000	2000	2300
Maximum cooling capacity (1)	(kW)	2000	2000	2800	3450	3750
Minimum power input (1)	(kW)	219	239	351	346	392
Maximum power input (1)	(kW)	355	333	479	558	584
Minimum EER		5.71	5.44	5.62	5.78	5.87
Maximum EER		6.15	6.1	6.21	6.23	6.48
Number of refrigerant circuits		1				
Number of compressors / capacity steps		1				
Sound pressure level at 1 m (2)	(dB(A))	82	82	83	81	81
Length	(mm)	4720	4720	4810	4950	4950
Width	(mm)	1990	1990	2090	2310	2310
Height	(mm)	2100	2100	2270	2520	2520
Electrical data						
Maximum amps	(A)	604	604	855	964	1100
Start-up amps (3)	(A)	975	975	1343	1878	1878

(1) Evaporator 12/7°C and 0.0176m²K/kW, and condenser at 30/35°C and 0.044m²K/kW

(2) At full load and in accordance with ISO9614

(3) Inrush current in star connection



CVHH – CDHH

Water-cooled centrifugal packaged chillers Series E™ CenTraVac™ chiller



R1233zd(E) refrigerant

Customer benefits

- Reliability
- Efficiency
- Low emissions

Range description

- CVHH = three-stage (50 Hz) or two-stage (60 Hz) single compressor
 - 4500 to 7000 kW – 50 Hz
 - 3000 to 7000 kW – 60 Hz
- CDHH = three-stage (50 Hz) or two-stage (60 Hz) dual compressor
 - 9500 to 14000 kW – 50 Hz
 - 6300 to 14000 kW – 60 Hz

Main features

- Next generation, low GWP refrigerant R1233zd(E)
- Direct drive multistage compressors
- Semi-hermetic compressor design
- Economizer
- Rapid restart after power failure

Options

As with all CenTraVac™ chillers, selection options result in a unit built to your specifications. From energy saving options to the enhanced electrical package to a variety of low and medium voltage options, your Trane chiller is customized for you.

- Low voltage (<600V) options include unit and remote-mounted wye delta or solid state starters, or a unit-mounted Adaptive Frequency™ drive.
- Medium voltage (3.3-6.6kV or 10-11kV) options include unit and remote-mounted across-the-line, primary reactor or auto transformer starters, or a remote-mounted Adaptive Frequency Drive.

Energy-saving options include:

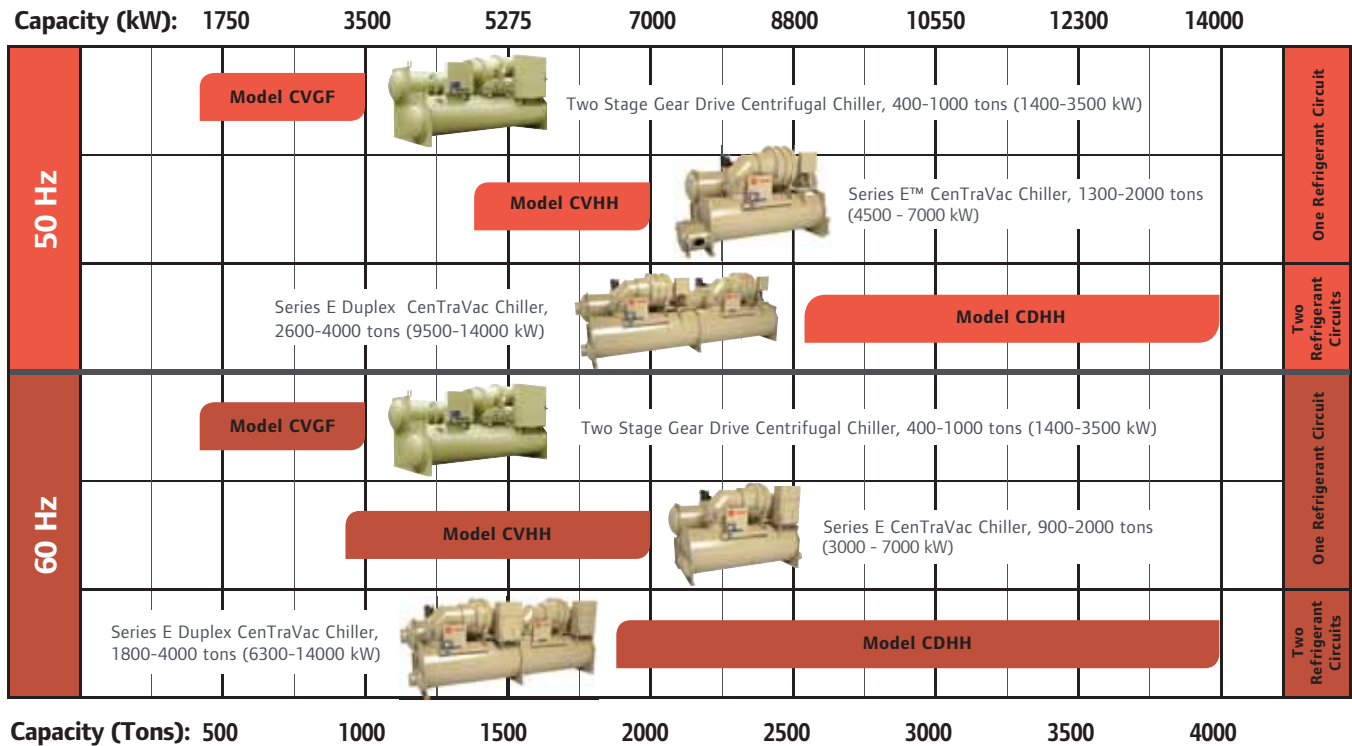
- Heat pump capabilities up to 60°C leaving condenser water
- Full heat recovery (full heat recovery double bundle heat exchanger)
- Auxiliary condenser (partial heat recovery)
- Thermal storage (down to -7.8°C)
- Free cooling

Controls

- Tracer AdaptiView™ Controls
 - Providing the intelligence behind CenTraVac Chillers, Trane Adaptive Control™ strategies respond to a variety of conditions to maintain efficient chiller plant operation for all applications, with patented control algorithms that maximize performance in variable primary flow systems.
 - The open protocol design works with any building automation system without the need for gateways (BACnet®, Modbus RTU and LonTalk®)

This description may not include all options and accessories available. For full technical information, visit engineer.trane.com

Trane Centrifugal Chiller Product Portfolio



Heat Rejection Systems



Trane customized solutions

To complete your chiller system, Trane proposes different types of heat rejection solutions. You clearly benefit – from the design phase to installation of your system – when you partner with a single-source supplier.

Air-cooled condensers

- Horizontal or V-type design
- To operate with Trane model CCUH, CCUN or RTUD condenserless chillers, either with R407C, R410A or R134a depending on the type
- Available with various fan-speed combinations to meet the most severe acoustical requirements
- Including different levels of unit mounted control options to optimize the performances of the entire system

Dry coolers

- Horizontal or V-type design
- To operate with Trane model CGWH, CGWN, RTWD or RTHD chillers
- Available with various fan-speed combinations to meet the most severe acoustical requirements
- Including different levels of unit mounted control options to optimize the performances of the entire system

Cooling towers

- Open or closed type
- With axial or centrifugal fans
- To operate with Trane model CGWH, CGWN, RTWD, RTHD, CVGF or CVHH/CDHH chillers
- Available with different levels of acoustic packages to meet the most severe acoustical environments

Contact your local Trane Sales Office to support you in the selection of the most appropriate solution for your application.



TRANE®

Heat Pumps

In response to the growing demand for energy saving systems, and to reassert our position as a key heating systems provider through the use of the most energy efficient technology available and the continuous design of sustainable solutions, Trane is proud to offer a full range of air-to-water and water-to-water heat pumps.



CGAR

Reversible air-to-water scroll heat pump



Customer benefits

- Energy savings and environmental protection
- Space saving: particularly slim design. The unit can be installed directly on a balcony, rooftop or ground without the need to have a plant room
- Contemporary appearance: blends in with the surrounding environment
- Quiet operation: low sound fans and components to achieve its low sound level

Main features

- High efficiency in both heating and cooling mode
- Designed to couple with fan coil units and air handling units for residential or small commercial air conditioning applications
- Hot water leaving temperature up to +50°C
- Scroll compressor(s), plate type evaporator, finned-copper tube and aluminum condenser, axial fan assembly, expansion valve, indoor cold/warm control switch, water flow switch, filter dryer, sight-glass, integral water pump, galvanized sheet metal housing with powder paint, factory mounted controls

Options

- Pressurized water tank system
- Condenser with blue fins corrosion protection

Control

- LCD Microprocessor-based Adjustable Water Temperature Control: Precise temperature control of inlet chilled water, operation modes and system protection are provided by the long-range controller
- Password can be set and any abnormal condition will be monitored and captured to facilitate quick repair and normal operation
- Interlocking function of the two-way valve is available

This description may not include all options and accessories available. For full technical information, visit engineer.trane.com

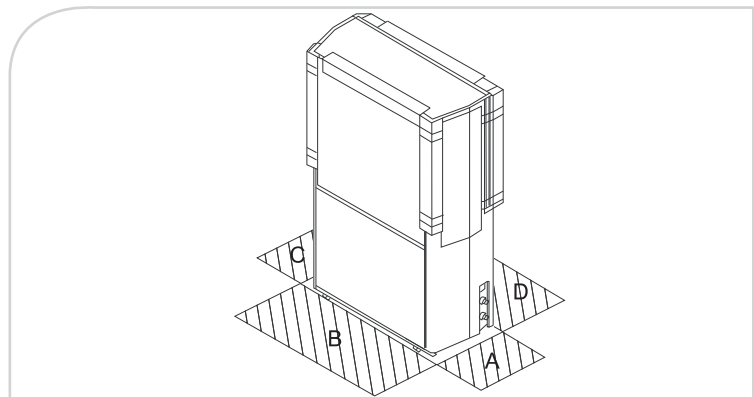
Heating mode operating outdoor air temperature range (min./max.)	(°C)	+5 / +15
Heating mode leaving water temperature range (min./max.)	(°C)	+30 / +50
Cooling operating outdoor air temperature range (min./max.) (1)	(°C)	+18 / 43
Cooling leaving water temperature range (min./max.) (2)	(°C)	-10 / 24
Power supply	(V/Ph/Hz)	400/3/50

CGAR		0505F	0605A	0755D	1005F	1505D	1505F
Net heating capacity (1)	(kW)	14.5	17.7	22.2	30.0	42.4	40.0
Total power input in heating (1)	(kW)	4.7	5.9	7.2	9.0	13.8	14.0
COP		3.09	3.00	3.08	3.33	3.07	2.86
Net cooling capacity (2)	(kW)	13.1	15.6	19.5	26.2	39.0	38.0
Total power input in cooling (2)	(kW)	4.4	5.6	6.8	8.6	13.7	13.4
EER		2.98	2.77	2.87	3.05	2.85	2.8
Number of refrigerant circuits		1	1	1	2	2	1
Number of compressors		1	1	1	2	2	1
Sound power level (3)	(dB(A))	62	61	63	64	66	69.5
Weight and dimensions (operating)							
Length	(mm)	950	950	1290	1290	1990	1290
Width	(mm)	393	393	500	500	500	500
Height	(mm)	1285	1285	1900	1900	1900	1900
Weight	(kg)	170	170	290	404	490	470
Clearance A	(mm)	300					
Clearance B	(mm)	1500					
Clearance C	(mm)	300					
Clearance D	(mm)	500					
Electrical data							
Maximum amps	(A)	13.0	16.7	19.6	25.8	40.8	39.9
Start-up amps	(A)	65.5	101.0	95.0	65.5 x 2	95.0 x 2	198.0

(1) At 40/45°C entering/leaving water temperature and 7°C/50% RH ambient air temperature

(2) At 12/7°C entering/leaving water temperature and 35°C ambient air temperature

(3) With 1pW reference sound power, according to ISO9614





CXAX

Reversible air-to-water scroll heat pump Conquest



Customer benefits

The best value chiller thanks to:

- Reversible operation: cooling or heating
- Low energy consumption: superior part load efficiency ESEER and SCOP
- Silent operation: discreet, even in the most sound sensitive applications
- Unique!: efficiency maintained when sound decreases
- Compact design: easier jobsite integration
- Reliability: main components designed and manufactured by Trane
- User friendly control interface and interoperability with building automation systems

Main features

- Compact design: reduced footprint and low profile design
- High quality finish
- Heating all year round: down to -15°C ambient and up to 60°C leaving water temperature
- One part load optimized efficiency level
- Ecodesign 2015 & 2017 compliant (European directive on heating devices)
- Two acoustic packages: SN, LN with no loss of efficiency
- Single and/or dual circuit offering

Options

- Various integrated hydraulic modules: single/dual pump, low/high head pressure
- Buffer tank for reliable and smooth operation
- Low temperature process cooling ($<4^{\circ}\text{C}$)
- Low ambient operation (-10°C)
- Black epoxy condenser coating

Accessories

- Elastomeric isolators

Control

- New Trane light commercial controller
- Standard 6 navigation button LCD display
- Optional deluxe display
 - Easy to read 7-inch color touchscreen display
 - Industry leading algorithms
 - Open protocol design
 - Adaptive control
- SmartCom interface: LonTalk®, Modbus®, BACnet® communication capabilities

This description may not include all options and accessories available. For full technical information, visit engineer.trane.com

Heating operating outdoor air temperature range (min./max.)	(°C)	-15 / +20
Heating leaving water temperature range (min./max.)	(°C)	+20 / +60
Cooling operating outdoor air temperature range (min./max.) (1)	(°C)	-10 / +46
Cooling leaving water temperature range (min./max.) (2)	(°C)	-10 / 20
Power supply	(V/Ph/Hz)	400/3/50

CXAX Standard Efficiency		015	017	020	023	026	030	036	039	045	035	040	046	052	060
Net heating capacity (3)		39.6	46.9	53.4	62.6	68.4	77.7	95.3	109.5	120.0	95.3	106.6	126.1	138.6	156.1
Total power input (3)		13.8	15.9	17.1	20.7	23.1	25.7	30.4	35.2	39.2	30.9	34.3	42.0	46.2	52.0
COP (3)		2.88	2.95	3.12	3.03	2.96	3.03	3.13	3.11	3.06	3.08	3.11	3.00	3.00	3.00
Eurovent efficiency class heating		C	C	B	B	C	B	B	B	B	B	B	B	B	B
Cooling capacity (4)	(kW)	42.9	48.5	57.6	67.3	73.6	82.3	96.4	109.2	121.1	98.3	111.2	130.5	144.6	161.4
Total power input (4)	(kW)	14.2	16.6	19.6	22.2	25.4	28.5	32.2	35.7	42.2	33.2	38.9	43.1	49.7	56.6
EER (4)		3.01	2.93	2.93	3.03	2.90	2.89	2.99	3.06	2.87	2.96	2.86	3.03	2.91	2.85
ESEER (4)		4.14	4.14	4.28	4.09	4.04	4.00	4.37	4.34	4.13	4.12	4.21	3.96	4.03	3.98
Eurovent efficiency class cooling		B	B	B	B	B	C	B	B	C	B	C	B	B	C
Sound power level (5)	(dBA)	84	84	84	85	85	86	86	87	88	87	87	88	88	89
Sound pressure level (6)	(dBA)	54	54	54	55	55	56	55	56	57	56	56	58	57	58
Sound power level (low noise) (5)	(dBA)	78	78	78	80	80	81	80	81	82	81	81	83	83	84
Sound pressure level (low noise) (6)	(dBA)	47	47	47	50	50	50	49	50	51	50	50	52	52	53
Number of circuit(s)		1	1	1	1	1	1	1	1	1	2	2	2	2	2
Number of compressors per circuit		2	2	2	2	2	2	3	3	3	2	2	2	2	2
Dimensions and weights (operating)															
Length	(mm)	2346	2346	2346	2346	2346	2346	2327	2327	2327	2327	2327	2327	2327	2327
Width	(mm)	1285	1285	1285	1285	1285	1285	2250	2250	2250	2250	2250	2250	2250	2250
Height	(mm)	1524	1524	1524	1524	1524	1724	1524	1524	1524	1524	1524	1524	1524	1724
Height (low noise)	(mm)	1747	1747	1747	1747	1747	1947	1747	1747	1747	1747	1747	1747	1747	1947
Clearance A	(mm)	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
Clearance B	(mm)	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
Clearance C	(mm)	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
Clearance D	(mm)	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
Weight	(kg)	539	545	582	624	630	665	881	925	942	974	998	1072	1093	1163
Electrical data															
Maximum amps	(A)	33.9	38.6	43.3	50.8	55.9	64.3	74.1	88.4	101.0	76.8	86.2	101.2	111.4	128.2
Start-up amps	(A)	116.4	160.4	165.1	183.5	188.6	231.8	198.2	221.1	268.5	198.6	208.0	233.9	244.1	295.7

(1) With low ambient temperature option

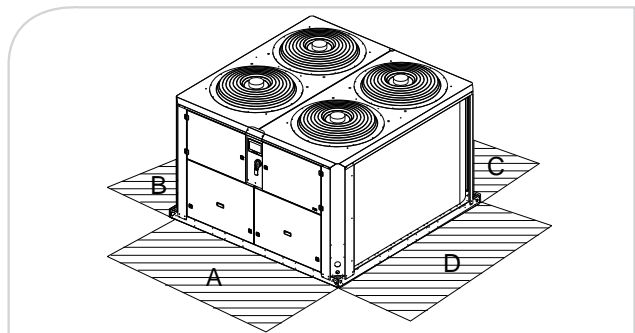
(2) With process cooling option

(3) At Eurovent conditions: 40/45°C entering/leaving water temperature and DB/WB 7°C/6°C ambient temperature according to EN 14-511

(4) At Eurovent conditions: 12/7°C entering/leaving water temperature and 35°C ambient temperature according to EN 14-511

(5) At Eurovent conditions, with 1pW reference sound power, according to ISO9614

(6) Average at 10 meters in a free field. This is a non-contractual data, calculated from the above certified sound power level according to the formula $L_p = L_w - 10 \log 5$.
This is an averaged value considering the unit as a parallelepiped box with five exposed face areas.





CXAM

Reversible air-to-water scroll heat pump AquaStream™ 3G



Customer benefits

- Life cycle effectiveness
- Efficiency and sound level without compromise
- All year round operation
- Extreme reliability and durability
- Wide application flexibility for comfort and process applications to fit the exact requirements
- Ease of installation and serviceability

Main features

- 2 efficiency levels: high or standard
- 3 acoustic versions: standard, low noise or comprehensive acoustic package treatment
- High efficiency scroll compressors
- Hot water leaving temperature up to +55°C
- Patented refrigerant circuit
- Trane design low sound level fans mounted on hinges
- Electronic expansion valve
- Brazed plates heat exchangers
- Powder coated components
- Disconnect switch/transformer
- Water strainer and flow switch

Options

- Integrated hydraulic module with or without buffer tank
- Single or double pump package
- Variable frequency drive for pump flow rate adjustment
- Freeze protection control
- Black epoxy condenser coil coating
- Architectural louvered panels, access guards

Accessories

- Neoprene isolators
- Grooved pipe connection kit

Tracer™ CH530 Control

Adaptive Control™ microprocessor featuring:

- Easy-to-use operator interface panel
- Smart defrost management
- External auto/stop
- External interlock
- Chilled water pump control
- Ice-making card (optional)
- Chilled water and current-limit remote setpoint card (optional)
- LonTalk®, Modbus®, BACnet® communication capabilities

Energy saving options

- Partial heat recovery (desuperheater)

This description may not include all options and accessories available. For full technical information, visit engineer.trane.com

Heating mode operating outdoor air temperature range (min./max.)	(°C)	-10/+20
Heating mode leaving water temperature range (min./max.)	(°C)	+20/+55
Cooling operating outdoor air temperature range (min./max.) (1)	(°C)	-10/+46
Cooling leaving water temperature range (min./max.) (2)	(°C)	-10/+20
Power supply	(V/Ph/Hz)	400/3/50

CXAM SE Compact		060	070	080	090	100	110	120	140	150	160	170
Net heating capacity (4)	(kW)	165.0	193.0	219.6	241.6	279.6	297.0	313.5	359.4	374.8	422.6	438.5
Total power input in heating net (4)	(kW)	58.1	69.4	78.4	86.6	99.9	106.4	112.4	136.1	144.2	157.1	164.8
COP net (4)		2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.6	2.6	2.7	2.7
Eurovent class		C	D	C	D	C	D	D	D	D	D	D
Net cooling capacity (4)	(kW)	160.3	190.5	222.5	246.3	280.3	299.1	323.1	379.9	404.2	442.1	460.9
Total power input net (4)	(kW)	57.5	68.5	77.5	88.9	100.8	110.8	121.4	147.8	160.4	166.2	176.6
EER net (4)		2.8	2.8	2.9	2.8	2.8	2.7	2.7	2.6	2.5	2.7	2.6
Eurovent class		C	C	C	C	C	C	D	D	D	D	D
ESEER net (4)		3.8	3.5	3.8	3.8	3.6	3.6	3.7	3.6	3.6	3.6	3.6
Number of refrigerant circuits		2	2	2	2	2	2	2	2	2	2	2
Number of compressors		4	4	4	4	4	4	4	6	6	6	6
Sound power level (6)	(dBA)	92	94	94	94	93	93	94	95	95	96	96
Sound pressure level (7)	(dBA)	60	62	62	62	61	61	61	63	63	63	63
Dimensions and weight (operating)												
Length	(mm)	2905	3819	3819	3819	4230	4230	4230	5145	5145	6062	6062
Width	(mm)	2266	2266	2266	2266	2273	2273	2273	2273	2273	2273	2273
Height	(mm)	2150	2150	2150	2150	2344	2344	2344	2344	2344	2344	2344
Weight	(kg)	1928	2196	2247	2358	2808	2808	2835	3500	3618	4005	4005
Clearance A	(mm)	1200	1200	1200	1200	1200	1200	1200	1200	1200	1200	1200
Clearance B	(mm)	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
Clearance C	(mm)	800	800	800	800	1000	1000	1000	1000	1000	1000	1000
Clearance D	(mm)	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
Electrical data												
Maximum amps	(A)	271.5	334.3	356.9	413.4	443.1	509.8	523.2	529.4	552.3	625.8	639.2
Start-up amps	(A)	130.2	159.1	181.7	204.6	234.3	247.7	261.1	320.6	343.5	363.7	377.1

(1) With low ambient option

(2) With process cooling options

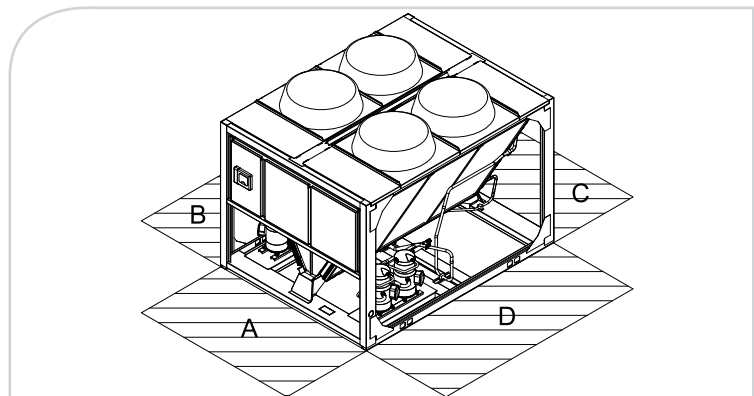
(3) At Eurovent conditions: 12/7°C entering/leaving water temperature and 35°C ambient air temperature

(4) At Eurovent conditions: 40/45°C entering/leaving water temperature and DB/WB 7°C/6°C ambient temperature according to EN 14-511

(5) At Eurovent conditions: 40/45°C entering/leaving water temperature and 35°C ambient air temperature

(6) At Eurovent conditions, with 1pW reference sound power, according to ISO9614

(7) At 10m in free field, calculated from the above sound power level according to the formula $L_p = L_w - 10 \log 5$



Heating mode operating outdoor air temperature range (min./max.)	(°C)	-10/+20
Heating mode leaving water temperature range (min./max.)	(°C)	+20/+55
Cooling operating outdoor air temperature range (min./max.) (1)	(°C)	-10/+46
Cooling leaving water temperature range (min./max.) (2)	(°C)	-10/+20
Power supply	(V/Ph/Hz)	400/3/50

CXAM SE Super quiet		060	070	080	090	100	110	120	140	150	160	170
Net heating capacity (4)	(kW)	162.6	188.8	216.0	236.9	274.4	291.3	308.0	350.1	366.4	411.6	428.0
Total power input in heating net (4)	(kW)	55.5	65.6	74.0	83.1	94.9	102.2	108.8	130.1	138.3	149.7	157.9
COP net (4)		2.9	2.9	2.9	2.9	2.9	2.9	2.8	2.7	2.7	2.8	2.7
Eurovent class		C	C	C	C	C	C	C	D	D	D	D
Net cooling capacity (4)	(kW)	157.2	186.0	218.6	240.6	274.3	292.1	313.2	372.4	394.0	433.3	450.6
Total power input net (4)	(kW)	57.6	67.9	77.2	89.5	101.2	111.5	123.3	150.2	164.2	167.9	179.5
EER net (4)		2.7	2.7	2.8	2.7	2.7	2.6	2.5	2.5	2.4	2.6	2.5
Eurovent class		C	C	C	D	C	D	D	E	E	D	D
ESEER net (4)		3.8	3.7	3.9	3.9	3.7	3.6	3.7	3.7	3.6	3.6	3.5
Number of refrigerant circuits		2	2	2	2	2	2	2	2	2	2	2
Number of compressors		4	4	4	4	4	4	4	6	6	6	6
Sound power level (6)	(dBA)	88	90	91	91	89	90	91	91	92	93	93
Sound pressure level (7)	(dBA)	56	58	59	59	57	58	59	59	59	60	60
Dimensions and weight (operating)												
Length	(mm)	2905	3819	3819	3819	4230	4230	4230	5145	5145	6062	6062
Width	(mm)	2266	2266	2266	2266	2273	2273	2273	2273	2273	2273	2273
Height	(mm)	2150	2150	2150	2150	2344	2344	2344	2344	2344	2344	2344
Weight	(kg)	1928	2196	2247	2358	2808	2808	2925	3500	3618	4005	4005
Clearance A	(mm)	1200	1200	1200	1200	1200	1200	1200	1200	1200	1200	1200
Clearance B	(mm)	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
Clearance C	(mm)	800	800	800	800	1000	1000	1000	1000	1000	1000	1000
Clearance D	(mm)	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
Electrical data												
Maximum amps	(A)	275.1	339.7	362.3	418.8	450.3	517.0	530.4	538.4	561.3	636.6	650.0
Start-up amps	(A)	130.2	159.1	181.7	204.6	217.6	231.0	247.1	302.5	325.4	338.8	-

(1) With low ambient option

(2) With process cooling options

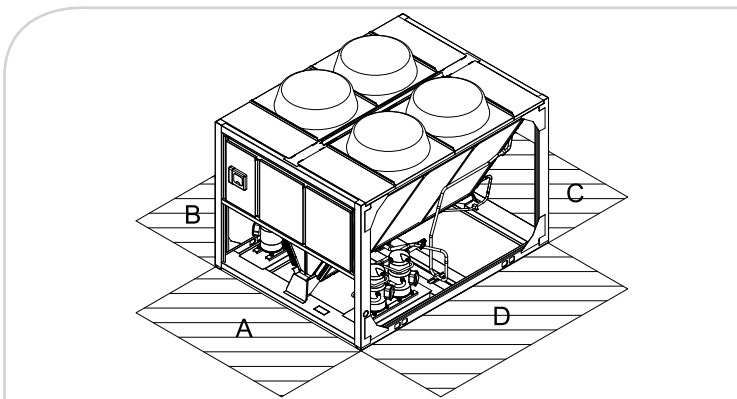
(3) At Eurovent conditions: 12/7°C entering/leaving water temperature and 35°C ambient air temperature

(4) At Eurovent conditions: 40/45°C entering/leaving water temperature and DB/WB 7°C/6°C ambient temperature according to EN 14-511

(5) At Eurovent conditions: 40/45°C entering/leaving water temperature and 35°C ambient air temperature

(6) At Eurovent conditions, with 1pW reference sound power, according to ISO9614

(7) At 10m in free field, calculated from the above sound power level according to the formula $L_p = L_w - 10 \log 5$



Heating mode operating outdoor air temperature range (min./max.)	(°C)	-10/+20
Heating mode leaving water temperature range (min./max.)	(°C)	+20/+55
Cooling operating outdoor air temperature range (min./max.) (1)	(°C)	-10/+46
Cooling leaving water temperature range (min./max.) (2)	(°C)	-10/+20
Power supply	(V/Ph/Hz)	400/3/50

CXAM SE Comprehensive Acoustic Package		070	080	090	100	110	120	140	150	160
Net heating capacity (4)	(kW)	186.0	210.7	247.6	297.3	267.3	319.4	354.1	384.2	400.1
Total power input in heating net (4)	(kW)	61.2	69.1	79.3	97.5	87.6	104.4	122.9	131.6	139.4
COP net (4)		3.0	3.1	3.1	3.1	3.1	3.1	2.9	2.9	2.9
Eurovent class		B	B	B	B	B	B	C	C	C
Net cooling capacity (4)	(kW)	179.3	206.7	235.4	290.7	259.3	307.1	366.1	395.4	410.0
Total power input net (4)	(kW)	67.9	80.1	88.5	107.7	102.9	119.0	147.6	162.0	176.7
EER net (4)		2.6	2.6	2.7	2.7	2.5	2.6	2.5	2.4	2.3
Eurovent class		D	D	D	C	D	D	E	E	E
ESEER net (4)		4.2	4.2	4.2	4.1	4.0	4.0	4.1	4.1	4.0
Number of refrigerant circuits		2	2	2	2	2	2	2	2	2
Number of compressors		4	4	4	4	4	4	6	6	6
Sound power level (6)	(dBA)	84	86	83	84	85	86	85	85	86
Sound pressure level (7)	(dBA)	52	53	51	51	52	54	53	53	54
Dimensions and weight (operating)										
Length	(mm)	3819	3819	4230	4230	5145	5145	6062	6062	6062
Width	(mm)	2266	2266	2273	2273	2273	2273	2273	2273	2273
Height	(mm)	2150	2150	2344	2344	2344	2344	2344	2344	2344
Weight	(kg)	2286	2337	2884	3012	3266	3356	4034	4159	4159
Clearance A	(mm)	1200	1200	1200	1200	1200	1200	1200	1200	1200
Clearance B	(mm)	1000	1000	1000	1000	1000	1000	1000	1000	1000
Clearance C	(mm)	800	800	1000	1000	1000	1000	1000	1000	1000
Clearance D	(mm)	1000	1000	1000	1000	1000	1000	1000	1000	1000
Electrical data										
Maximum amps	(A)	322.0	344.6	403.8	426.7	496.1	509.5	511.6	534.5	601.2
Start-up amps	(A)	146.8	169.4	195.0	217.9	234.0	247.4	325.7	339.1	-

(1) With low ambient option

(2) With process cooling options

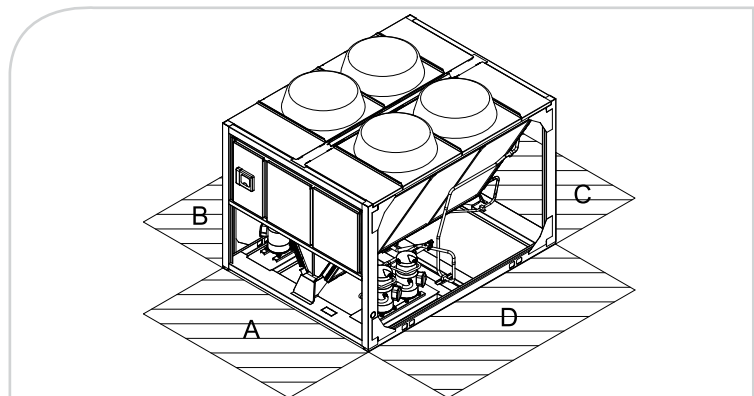
(3) At Eurovent conditions: 12/7°C entering/leaving water temperature and 35°C ambient air temperature

(4) At Eurovent conditions: 40/45°C entering/leaving water temperature and DB/WB 7°C/6°C ambient temperature according to EN 14-511

(5) At Eurovent conditions: 40/45°C entering/leaving water temperature and 35°C ambient air temperature

(6) At Eurovent conditions, with 1pW reference sound power, according to ISO9614

(7) At 10m in free field, calculated from the above sound power level according to the formula $L_p = L_w - 10 \log 5$



Operating outdoor air temperature range (min./max.) (1)	(°C)	-10/+46
Leaving water temperature range (min./max.) (2)	(°C)	-10/+20
Heating mode operating outdoor air temperature range (min./max.)	(°C)	-10/+20
Heating mode leaving water temperature range (min./max.)	(°C)	+20/+55
Power supply	(V/Ph/Hz)	400/3/50

CXAM HE Compact		060	070	080	090	100	110	120	140	150
Net heating capacity (4)	(kW)	172.6	180.0	230.3	251.2	284.5	297.2	318.0	363.5	400.5
Total power input in heating net (4)	(kW)	56.6	59.4	74.1	82.6	93.6	99.7	109.3	129.4	140.0
COP net (4)		3.1	3.0	3.1	3.0	3.0	3.0	2.9	2.8	2.9
Eurovent class		B	B	B	B	B	C	C	C	C
Net cooling capacity (4)	(kW)	162.8	192.4	230.0	256.0	292.8	309.8	331.1	377.6	400.6
Total power input net (4)	(kW)	54.1	64.4	71.4	82.8	94.4	103.9	114.6	134.4	146.2
EER net (4)		3.0	3.0	3.2	3.1	3.1	3.0	2.9	2.8	2.7
Eurovent class		B	B	A	B	A	B	C	C	C
ESEER net (4)		3.9	4.1	4.3	4.3	4.1	4.0	4.1	4.1	4.0
Number of refrigerant circuits		2	2	2	2	2	2	2	2	2
Number of compressors		4	4	4	4	4	4	4	6	6
Sound power level (6)	(dBA)	91	91	92	92	92	93	93	94	94
Sound pressure level (7)	(dBA)	58	59	59	60	60	60	61	61	61
Dimensions and weight (operating)										
Length	(mm)	3819	3819	4230	4230	5145	5145	5145	6062	6062
Width	(mm)	2266	2266	2273	2273	2273	2273	2273	2273	2273
Height	(mm)	2150	2150	2344	2344	2344	2344	2344	2344	2344
Weight	(kg)	2213	2264	2710	2838	3300	3276	3286	3911	4005
Clearance A	(mm)	1200	1200	1200	1200	1200	1200	1200	1200	1200
Clearance B	(mm)	1000	1000	1000	1000	1000	1000	1000	1000	1000
Clearance C	(mm)	800	800	1000	1000	1000	1000	1000	1000	1000
Clearance D	(mm)	1000	1000	1000	1000	1000	1000	1000	1000	1000
Electrical data										
Maximum amps	(A)	129.2	151.3	178.1	201.0	228.1	241.5	254.9	311.8	334.7
Start-up amps	(A)	270.5	326.5	353.3	409.8	436.9	503.6	517.0	520.6	543.5

(1) With low ambient option

(2) With process cooling options

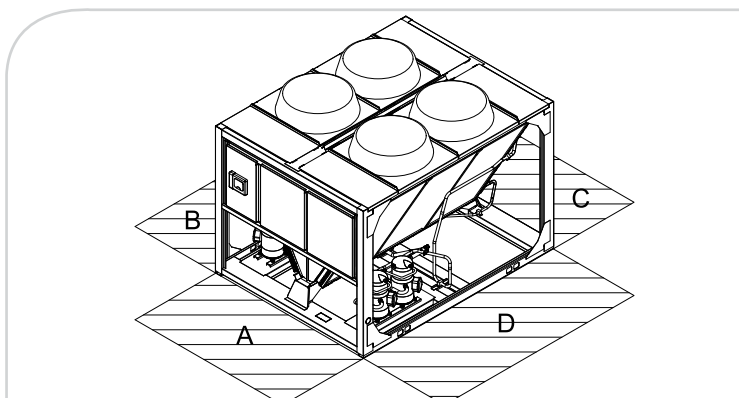
(3) At Eurovent conditions: 12/7°C entering/leaving water temperature and 35°C ambient air temperature

(4) At Eurovent conditions: 40/45°C entering/leaving water temperature and DB/WB 7°C/6°C ambient temperature according to EN 14-511

(5) At Eurovent conditions: 40/45°C entering/leaving water temperature and 35°C ambient air temperature

(6) At Eurovent conditions, with 1pW reference sound power, according to ISO9614

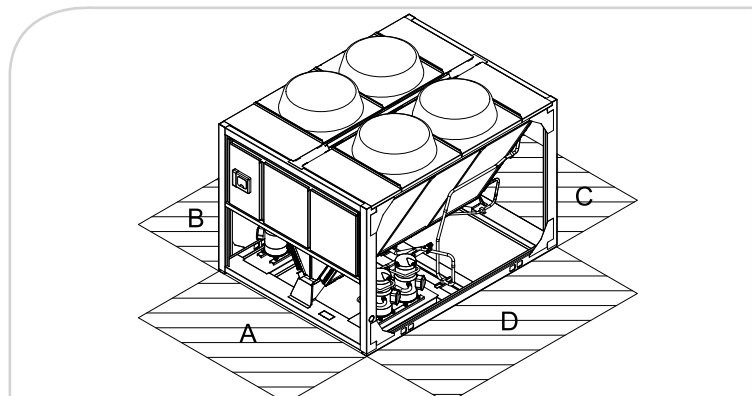
(7) At 10m in free field, calculated from the above sound power level according to the formula $L_p = L_w - 10 \log S$



Operating outdoor air temperature range (min./max.) (1)	(°C)	-10/+46
Leaving water temperature range (min./max.) (2)	(°C)	-10/+20
Heating mode operating outdoor air temperature range (min./max.)	(°C)	-10/+20
Heating mode leaving water temperature range (min./max.)	(°C)	+20/+55
Power supply	(V/Ph/Hz)	400/3/50

CXAM HE Super Quiet		060	070	080	090	100	110	120	140	150
Net heating capacity (4)	(kW)	171.8	193.7	230.2	251.1	283.6	301.1	318.2	363.5	398.7
Total power input in heating net (4)	(kW)	56.1	62.9	73.8	82.3	93.3	101.4	108.6	129.3	138.9
COP net (4)		3.1	3.1	3.1	3.1	3.0	3.0	2.9	2.8	2.9
Eurovent class		B	B	B	B	B	C	C	C	C
Net cooling capacity (4)	(kW)	162.1	191.7	230.0	256.3	292.8	310.1	331.5	377.6	401.3
Total power input net (4)	(kW)	54.4	64.8	71.0	82.4	93.8	103.7	113.9	133.4	145.4
EER net (4)		3.0	3.0	3.2	3.1	3.1	3.0	2.9	2.8	2.8
Eurovent class		B	B	A	A	A	B	B	C	C
ESEER net (4)		4.0	4.2	4.4	4.5	4.2	4.2	4.2	4.2	4.1
Number of refrigerant circuits		2	2	2	2	2	2	2	2	2
Number of compressors		4	4	4	4	4	4	4	6	6
Sound power level (6)	(dBA)	85	88	89	88	88	89	90	90	89
Sound pressure level (7)	(dBA)	53	55	56	56	56	57	58	57	57
Dimensions and weight (operating)										
Length	(mm)	3819	3819	4230	4230	5145	5145	5145	6062	6062
Width	(mm)	2266	2266	2273	2273	2273	2273	2273	2273	2273
Height	(mm)	2150	2150	2344	2344	2344	2344	2344	2344	2344
Weight	(kg)	2213	2264	2710	2838	3300	3276	3286	3911	4005
Clearance A	(mm)	1200	1200	1200	1200	1200	1200	1200	1200	1200
Clearance B	(mm)	1000	1000	1000	1000	1000	1000	1000	1000	1000
Clearance C	(mm)	800	800	1000	1000	1000	1000	1000	1000	1000
Clearance D	(mm)	1000	1000	1000	1000	1000	1000	1000	1000	1000
Electrical data										
Maximum amps	(A)	129.2	151.3	178.1	201.0	228.1	241.5	254.9	311.8	334.7
Start-up amps	(A)	270.5	326.5	353.3	409.8	436.9	503.6	517.0	520.6	543.5

- (1) With low ambient option
(2) With process cooling options
(3) At Eurovent conditions: 12/7°C entering/leaving water temperature and 35°C ambient air temperature
(4) At Eurovent conditions: 40/45°C entering/leaving water temperature and DB/WB 7°C/6°C ambient temperature according to EN 14-511
(5) At Eurovent conditions: 40/45°C entering/leaving water temperature and 35°C ambient air temperature
(6) At Eurovent conditions, with 1pW reference sound power, according to ISO9614
(7) At 10m in free field, calculated from the above sound power level according to the formula $L_p = L_w - 10 \log S$



Operating outdoor air temperature range (min./max.) (1)	(°C)	-10/+46
Leaving water temperature range (min./max.) (2)	(°C)	-10/+20
Heating mode operating outdoor air temperature range (min./max.)	(°C)	-10/+20
Heating mode leaving water temperature range (min./max.)	(°C)	+20/+55
Power supply	(V/Ph/Hz)	400/3/50

CXAM HE Comprehensive Acoustic Package		060	070	080	090	100	110	120
Net heating capacity (4)	(kW)	169.3	190.4	224.9	257.4	276.9	302.4	321.0
Total power input in heating net (4)	(kW)	53.2	59.9	69.4	80.4	88.8	97.5	104.9
COP net (4)		3.2	3.2	3.2	3.2	3.1	3.1	3.1
Eurovent class		B	B	A	A	B	B	B
Net cooling capacity (4)	(kW)	158.6	185.5	226.2	255.9	285.8	309.8	331.6
Total power input gross (3)	(kW)	53.3	65.7	72.0	83.3	95.2	100.6	111.2
Total power input net (4)	(kW)	53.9	66.2	72.5	84.2	96.2	101.9	112.4
EER net (4)		2.9	2.8	3.1	3.0	3.0	3.0	3.0
Eurovent class		B	C	A	B	B	B	B
ESEER net (4)		4.2	4.3	4.7	4.5	4.4	4.4	4.4
Number of refrigerant circuits		2	2	2	2	2	2	2
Number of compressors		4	4	4	4	4	4	4
Sound power level (6)	(dBA)	83	85	83	83	84	85	86
Sound pressure level (7)	(dBA)	50	52	51	51	52	53	54
Dimensions and weight (operating)								
Length	(mm)	3819	3819	4230	5145	5145	6062	6062
Width	(mm)	2266	2266	2273	2273	2273	2273	2273
Height	(mm)	2150	2150	2344	2344	2344	2344	2344
Weight	(kg)	2303	2354	2851	3199	3414	3787	3800
Clearance A	(mm)	1200	1200	1200	1200	1200	1200	1200
Clearance B	(mm)	1000	1000	1000	1000	1000	1000	1000
Clearance C	(mm)	800	800	1000	1000	1000	1000	1000
Clearance D	(mm)	1000	1000	1000	1000	1000	1000	1000
Electrical data								
Maximum amps	(A)	124.7	146.8	172.1	195.0	220.6	236.7	250.1
Start-up amps	(A)	266.0	322.0	347.3	403.8	429.4	498.8	512.2

(1) With low ambient option

(2) With process cooling options

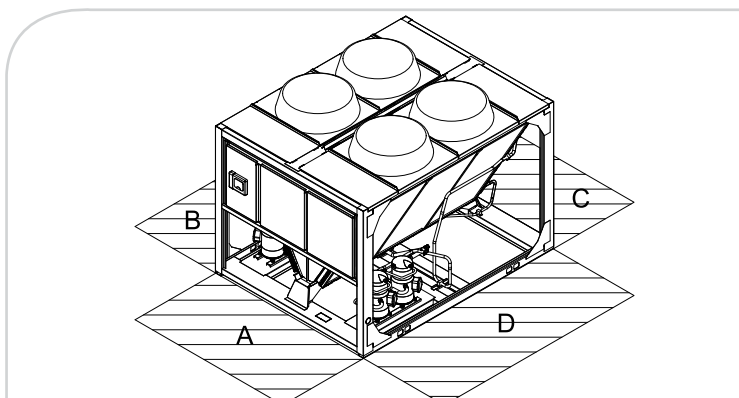
(3) At Eurovent conditions: 12/7°C entering/leaving water temperature and 35°C ambient air temperature

(4) At Eurovent conditions: 40/45°C entering/leaving water temperature and DB/WB 7°C/6°C ambient temperature according to EN 14-511

(5) At Eurovent conditions: 40/45°C entering/leaving water temperature and 35°C ambient air temperature

(6) At Eurovent conditions, with 1pW reference sound power, according to ISO9614

(7) At 10m in free field, calculated from the above sound power level according to the formula $L_p = L_w - 10 \log 5$



Save energy with total or partial heat recovery factory-fitted options on CXAM

- Reduced operating cost
- Pre-heat sanitary water (for commercial buildings) or kitchen and laundries water (in hotels and resorts)
- Reduced carbon footprint

Partial heat recovery - model CXAM HE compact

Unit size	Unit power input (1) (kW)	Cooling capacity in cooling (1) (kW)	Heating capacity (2) (kW)	Heat recovered (2) (%)	Maximum hot water temperature (°C)
52	48.3	149.8	39.1	26	60
60	54.5	164.2	46.7	28	60
70	65.2	193.4	57.6	30	60
80	72.9	231.0	56.3	24	60
90	84.5	256.7	70.4	27	60
100	96.3	293.6	81.1	28	60
110	105.9	311.2	93.6	30	60
120	116.5	332.3	104.4	31	60
140	136.6	379.0	120.8	32	60
150	148.6	402.6	132.9	33	60
160	159.4	423.3	143.9	34	60

(1) At Eurovent conditions: 12/7°C entering/leaving water temperature and 35°C ambient air temperature

(2) At 40/45°C entering/leaving water temperature



CXAO

Reversible air-to-water scroll heat pump



Customer benefits

- Eco-friendly and efficient refrigerant R410A refrigerant and heat exchangers with increased surface area
- Compact overall dimensions allow extremely flexible installations
- Simplified maintenance operations thanks to easy access to components

Main features

- Scroll compressors
- Statically and dynamically balanced ECO-PROFILE axial fans
- Shell and tube or plate heat exchanger with differential pressure switch and antifreeze protection (electric heater) on water side
- High efficiency finned coils (with seamless copper tubes expanded into corrugated aluminium) heat exchangers on air side
- Casing and panels in galvanized and painted steel

Options

- On/off condensing control
- Condensing control with variable fan speed modulation
- Control panel electric heater with thermostat
- Phase failure protection relay
- Water pumps automatic changeover
- Condensing coil protection grilles
- Packaged anti-intrusion grille
- Gas gauges

- Soft starter
- Pre-painted condensing coils
- Epoxy coated condensing coil fins
- Copper/copper or tinned copper/copper condensing coils

Accessories

- Flow switch
- Automatic water filling
- Water strainer
- Kit flanges
- Victaulic adapter
- Water gauges
- Rubber and/or spring anti-vibration mounts

Controls

- Standard 6 button LCD display
- 16bit microprocessor with a 2MB storage memory, real time clock for alarms storage, multi-language control software
- Optional
 - Remote control display
 - Communication card RS485
 - Local plant visor - supervising system on local PC
 - Local plant visor - remote supervising system
 - LonTalk®, BACnet® communication capabilities

This description may not include all options and accessories available. For full technical information, visit engineer.trane.com

Heating operating outdoor air temperature range (min./max.)	(°C)	-5 / 20
Heating leaving water temperature range (min./max.)	(°C)	26 / 55
Cooling operating outdoor air temperature range (min./max.) (1)	(°C)	22 / 45
Cooling leaving water temperature range (min./max.) (2)	(°C)	-8 / 15
Power supply	(V/Ph/Hz)	400/3/50

CXAO Standard Noise		120	130	140	150	165	175	180	190
Net heating capacity (3)		474.0	502.0	557.0	591.0	659.0	698.0	728.0	758.0
Total power input (3)		144.0	158.0	163.0	175.0	196.0	206.0	213.0	221.0
COP (3)		3.05	2.95	3.12	3.11	3.12	3.08	3.11	3.13
Cooling capacity (4)	(kW)	419.0	454.0	492.0	524.0	574.0	604.0	638.0	659.0
Total power input (4)	(kW)	146.0	159.0	167.0	179.0	203.0	202.0	220.0	225.0
EER (4)		2.65	2.65	2.70	2.71	2.63	2.72	2.65	2.68
ESEER (4)		4.05	4.10	4.03	4.14	3.44	3.85	3.22	3.94
Sound power level (5)	(dBA)	93	92	92	94	95	94	96	96
Sound pressure level (6)	(dBA)	61	60	59	62	63	62	63	63
Number of circuit(s)		2	2	2	2	2	3	3	3
Number of compressors per circuit		5	6	5	6	6	8	7	7
Dimensions and weight (operating)									
Length	(mm)	4535	4535	5505	5505	5505	8005	8005	8005
Width	(mm)	2260	2260	2260	2260	2260	2260	2260	2260
Height	(mm)	2400	2400	2400	2400	2400	2400	2400	2400
Clearance A	(mm)	1500	1500	1500	1500	1500	1500	1500	1500
Clearance B	(mm)	1500	1500	1500	1500	1500	1500	1500	1500
Clearance C	(mm)	500	500	500	500	500	500	500	500
Clearance D	(mm)	1500	1500	1500	1500	1500	1500	1500	1500
Weight	(kg)	3732	3932	4112	4180	4564	6327	6624	6733
Electrical data									
Maximum amps	(A)	441	498	480	537	570	645	549	661
Start-up amps	(A)	764	739	803	860	893	968	872	984

CXAO Standard Noise		195	205	215	220	225	250	270	290
Net heating capacity (3)		777.0	812.0	851.0	880.0	924.0	986.0	1051.0	1175.0
Total power input (3)		230.0	243.0	255.0	263.0	275.0	294.0	313.0	340.0
COP (3)		3.10	3.07	3.08	3.10	3.12	3.13	3.12	3.20
Cooling capacity (4)	(kW)	684.0	718.0	758.0	779.0	795.0	873.0	945.0	1027.0
Total power input (4)	(kW)	235.0	251.0	266.0	272.0	280.0	310.0	324.0	345.0
EER (4)		2.67	2.64	2.64	2.66	2.64	2.63	2.71	2.76
ESEER (4)		4.04	4.00	4.10	4.08	3.68	4.25	4.2	4.24
Sound power level (5)	(dBA)	96	96	96	97	96	97	97	97
Sound pressure level (6)	(dBA)	64	63	64	64	64	64	64	65
Number of circuit(s)		3	3	3	3	3	3	4	4
Number of compressors per circuit		7	8	8	8	9	9	10	11
Dimensions and weight (operating)									
Length	(mm)	8005	8005	8005	8005	8005	8005	8610	9580
Width	(mm)	2260	2260	2260	2260	2260	2260	2260	2260
Height	(mm)	2400	2400	2400	2400	2400	2400	2400	2400
Clearance A	(mm)	1500	1500	1500	1500	1500	1500	1500	1500
Clearance B	(mm)	1500	1500	1500	1500	1500	1500	1500	1500
Clearance C	(mm)	500	500	500	500	500	500	500	500
Clearance D	(mm)	1500	1500	1500	1500	1500	1500	1500	1500
Weight	(kg)	6856	7118	7204	7310	7494	7760	7348	7645
Electrical data									
Maximum amps	(A)	672	740	751	762	819	852	926	1011
Start-up amps	(A)	995	1063	1074	1085	1142	1175	1249	1334

(1) With low ambient option

(2) With process cooling options

(3) At Eurovent conditions: 40/45°C entering/leaving water temperature and DB/WB 7°C/6°C ambient temperature according to EN 14-511

(4) At Eurovent conditions: 12/7°C entering/leaving water temperature and 35°C ambient temperature according to EN 14-511

(5) At Eurovent conditions, with 1pW reference sound power, according to ISO9614

(6) Average at 10 meters in a free field. This is non-contractual data, calculated from the above certified sound power level according to the formula $L_p = L_w - 10 \log S$. This is an averaged value considering the unit as a parallelepiped box with five exposed face areas.

Heating operating outdoor air temperature range (min./max.)	(°C)	-5 / 20
Heating leaving water temperature range (min./max.)	(°C)	26 / 55
Cooling operating outdoor air temperature range (min./max.) (1)	(°C)	22 / 45
Cooling leaving water temperature range (min./max.) (2)	(°C)	-8 / 15
Power supply	(V/Ph/Hz)	400/3/50

CXAO Low noise		120	130	140	150	165	175	180	190
Net heating capacity (3)		454.7	484.2	535.4	568.5	634.2	679.9	703.6	730.3
Total power input (3)		143.0	157.8	162.8	174.8	195.6	205.4	212.9	220.3
COP (3)		2.99	2.90	3.08	3.05	3.07	3.07	3.08	3.09
Cooling capacity (4)	(kW)	401.2	433.7	473.2	500.6	553.0	600.2	615.3	635.6
Total power input (4)	(kW)	151.8	165.7	172.8	186.7	211.2	209.7	226.2	231.2
EER (4)		2.50	2.48	2.57	2.53	2.49	2.66	2.54	2.57
ESEER (4)		3.89	3.95	3.90	3.95	3.31	3.83	3.15	3.84
Sound power level (5)	(dBA)	91	90	90	92	93	92	94	94
Sound pressure level (6)	(dBA)	59	58	57	60	61	60	61	61
Number of circuit(s)		2	2	2	2	2	3	3	3
Number of compressors per circuit		5	6	5	6	6	8	7	7
Dimensions and weight (operating)									
Length	(mm)	4535	4535	5505	5505	5505	8005	8005	8005
Width	(mm)	2260	2260	2260	2260	2260	2260	2260	2260
Height	(mm)	2400	2400	2400	2400	2400	2400	2400	2400
Clearance A	(mm)	1500	1500	1500	1500	1500	1500	1500	1500
Clearance B	(mm)	1500	1500	1500	1500	1500	1500	1500	1500
Clearance C	(mm)	500	500	500	500	500	500	500	500
Clearance D	(mm)	1500	1500	1500	1500	1500	1500	1500	1500
Weight	(kg)	3792	4004	4172	4252	4636	6411	6708	6817
Electrical data									
Maximum amps	(A)	441	498	480	537	570	645	549	661
Start-up amps	(A)	764	739	803	860	893	968	872	984

CXAO Low Noise		195	205	215	220	225	250	270	290
Net heating capacity (3)		750.3	796.7	822.1	847.3	889.7	947.5	1022.7	1112.6
Total power input (3)		229.1	248.1	254.6	262.1	274.3	293.1	312.1	339.2
COP (3)		3.06	3.02	3.04	3.05	3.07	3.07	3.10	3.09
Cooling capacity (4)	(kW)	658.8	700.0	732.3	748.5	764.0	824.9	900.9	961.1
Total power input (4)	(kW)	241.4	266.4	274.6	285.5	290.1	318.9	241.0	358.1
EER (4)		2.56	2.48	2.52	2.48	2.50	2.46	2.51	2.54
ESEER (4)		3.93	3.82	3.98	3.91	3.50	4.06	4.0	3.98
Sound power level (5)	(dBA)	94	94	94	95	94	95	95	95
Sound pressure level (6)	(dBA)	62	61	62	62	62	62	62	63
Number of circuit(s)		3	3	3	3	3	3	4	4
Number of compressors per circuit		7	8	8	8	9	9	10	11
Dimensions and weight (operating)									
Length	(mm)	8005	8005	8005	8005	8005	8005	8610	9580
Width	(mm)	2260	2260	2260	2260	2260	2260	2260	2260
Height	(mm)	2400	2400	2400	2400	2400	2400	2400	2400
Clearance A	(mm)	1500	1500	1500	1500	1500	1500	1500	1500
Clearance B	(mm)	1500	1500	1500	1500	1500	1500	1500	1500
Clearance C	(mm)	500	500	500	500	500	500	500	500
Clearance D	(mm)	1500	1500	1500	1500	1500	1500	1500	1500
Weight	(kg)	6940	7214	7300	7406	7602	7868	7469	7777
Electrical data									
Maximum amps	(A)	672	740	751	762	819	852	926	1011
Start-up amps	(A)	995	1063	1074	1085	1142	1175	1249	1334

(1) With low ambient option

(2) With process cooling options

(3) At Eurovent conditions: 40/45°C entering/leaving water temperature and DB/WB 7°C/6°C ambient temperature according to EN 14-511

(4) At Eurovent conditions: 12/7°C entering/leaving water temperature and 35°C ambient temperature according to EN 14-511

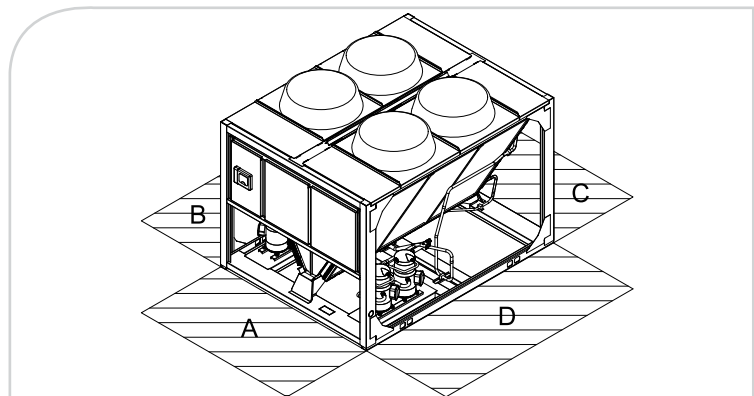
(5) At Eurovent conditions, with 1pW reference sound power, according to ISO9614

(6) Average at 10 meters in a free field. This is non-contractual data, calculated from the above certified sound power level according to the formula $L_p = L_w - 10 \log S$. This is an averaged value considering the unit as a parallelepiped box with five exposed face areas.

CXAO Super Low noise		120	130	140	150	165	175	180	190
Net heating capacity (3)		454.1	480.3	527.2	554.8	629.2	640.5	702.7	744.5
Total power input (3)		143.0	157.8	162.3	174.2	195.3	203.6	212.8	221.0
COP (3)		3.00	2.85	3.05	2.97	3.03	2.93	3.09	3.16
Cooling capacity (4)	(kW)	396.9	423.5	465.3	193.8	552.8	563.4	611.6	630.1
Total power input (4)	(kW)	154.9	172.5	178.1	191.6	211.4	233.2	228.3	235.0
EER (4)		2.43	2.31	2.47	2.42	2.47	2.27	2.52	2.52
ESEER (4)		3.90	3.74	3.82	3.76	3.21	3.36	3.04	3.67
Sound power level (5)	(dBA)	88	87	87	89	91	89	91	91
Sound pressure level (6)	(dBA)	56	55	54	57	58	57	58	58
Number of circuit(s)		2	2	2	2	2	3	3	3
Number of compressors per circuit		5	6	5	6	6	8	7	7
Dimensions and weight (operating)									
Length	(mm)	4535	5505	5505	6475	6475	8005	8005	8005
Width	(mm)	2260	2260	2260	2260	2260	2260	2260	2260
Height	(mm)	2400	2400	2400	2400	2400	2400	2400	2400
Clearance A	(mm)	1500	1500	1500	1500	1500	1500	1500	1500
Clearance B	(mm)	1500	1500	1500	1500	1500	1500	1500	1500
Clearance C	(mm)	500	500	500	500	500	500	500	500
Clearance D	(mm)	1500	1500	1500	1500	1500	1500	1500	1500
Weight	(kg)	3948	4356	4328	4695	5079	6567	6924	7033
Electrical data									
Maximum amps	(A)	441	504	480	543	576	645	549	661
Start-up amps	(A)	764	745	803	866	899	968	872	984

CXAO Super Low Noise		195	205	215	220	225	250	270	290
Net heating capacity (3)		738.5	786.6	810.4	830.2	893.6	954.9	995.0	1130.7
Total power input (3)		228.5	247.6	253.9	261.1	276.1	293.5	312.6	340.1
COP (3)		3.04	2.98	2.99	2.99	3.03	3.06	2.98	3.13
Cooling capacity (4)	(kW)	649.2	691.9	723.9	738.2	780.9	846.6	873.0	975.2
Total power input (4)	(kW)	248.1	271.9	280.1	289.6	287.2	317.6	330.6	349.3
EER (4)		2.47	2.40	2.44	2.41	2.55	2.52	2.48	2.63
ESEER (4)		3.81	3.62	3.74	3.73	3.47	3.94	4.1	3.83
Sound power level (5)	(dBA)	91	91	91	92	91	92	92	92
Sound pressure level (6)	(dBA)	59	58	59	59	58	59	59	59
Number of circuit(s)		3	3	3	3	3	3	4	4
Number of compressors per circuit		7	8	8	8	9	9	10	11
Dimensions and weight (operating)									
Length	(mm)	8005	8975	8975	8975	9580	9580	10550	10550
Width	(mm)	2260	2260	2260	2260	2260	2260	2260	2260
Height	(mm)	2400	2400	2400	2400	2400	2400	2400	2400
Clearance A	(mm)	1500	1500	1500	1500	1500	1500	1500	1500
Clearance B	(mm)	1500	1500	1500	1500	1500	1500	1500	1500
Clearance C	(mm)	500	500	500	500	500	500	500	500
Clearance D	(mm)	1500	1500	1500	1500	1500	1500	1500	1500
Weight	(kg)	7156	7567	7663	7965	8247	9778	8246	8258
Electrical data									
Maximum amps	(A)	672	746	757	768	831	864	938	1017
Start-up amps	(A)	995	1069	1080	1091	1154	1187	1261	1340

- (1) With low ambient option
(2) With process cooling options
(3) At Eurovent conditions: 40/45°C entering/leaving water temperature and DB/WB 7°C/6°C ambient temperature according to EN 14-511
(4) At Eurovent conditions: 12/7°C entering/leaving water temperature and 35°C ambient temperature according to EN 14-511
(5) At Eurovent conditions, with 1pW reference sound power, according to ISO9614
(6) Average at 10 meters in a free field. This is non-contractual data, calculated from the above certified sound power level according to the formula $L_p = L_w - 10 \log S$. This is an averaged value considering the unit as a parallelepiped box with five exposed face areas.





RTXB

Reversible air-to-water helical-rotary heat pump



Customer benefits

- Eco-friendly and efficient refrigerant R134a, without negative impact on stratospheric ozone layer (ODP=0)
- Compact overall dimensions allow extremely flexible installations
- Simplified maintenance operations thanks to easy access to components

Main features

- Helical-rotary compressors
- Statically and dynamically balanced ECO-PROFILE axial fans
- Shell and tube type heat exchangers on water side
- High efficiency finned coils (with seamless copper tubes expanded into corrugated aluminium) heat exchangers on air side
- Electronic expansion valve
- Galvanized and painted steel casing and panels
- Low Noise version with insulated compressors housing and two speed fan motors. Super Low Noise version with insulated compressors housing, oversized coils and variable fan speed regulation

Options

- Compressors step less capacity control
- Soft start
- On/off condensing control
- Condensing control with variable fan speed modulation
- Power factor correction to cos phi 0.91
- Automatic circuit breakers for compressors and/or fans
- Numbered wires

- Star-Delta starter
- Control panel electric heater with thermostat
- Phase failure protection relay
- Anti-intrusion and/or condensing coil protection grilles
- Gas gauges
- Pre-painted, epoxy coated, copper/copper or tinned copper/copper condensing coils

Accessories

- Flow switch
- Automatic water filling
- Water Victaulic™ kit
- Water strainer
- Water gauges
- Rubber and/or spring anti-vibration mounts

Controls

- Standard 6 button LCD display
- 16bit microprocessor with a 2MB storage memory, real time clock for alarms storage, multi-language control software
- Optional
 - Remote control display
 - Communication card RS485
 - Local plant visor - supervising system on local PC
 - Local plant visor - remote supervising system
 - LonTalk®, BACnet® communication capabilities

This description may not include all options and accessories available. For full technical information, visit engineer.trane.com

Heating operating outdoor air temperature range (min./max.)	(°C)	-7 / 20
Heating leaving water temperature range (min./max.)	(°C)	26 / 54
Cooling operating outdoor air temperature range (min./max.) (1)	(°C)	20 / 45
Cooling leaving water temperature range (min./max.) (2)	(°C)	-8 / 15
Power supply	(V/Ph/Hz)	400/3/50

RTXB Standard Noise		480	510	560	630	650	770	910	1050
Net heating capacity (3)		540.0	563.0	607.0	664.0	703.0	806.0	948.0	1094.0
Total power input (3)		151.0	158.0	168.0	179.0	190.0	220.0	258.0	311.0
COP (3)		3.20	3.19	3.22	3.28	3.29	3.26	3.30	3.18
Cooling capacity (4)	(kW)	476.0	515.0	555.0	634.0	649.0	767.0	908.0	1047.0
Total power input (4)	(kW)	155.0	170.0	178.0	193.0	199.0	237.0	283.0	346.0
EER (4)		2.76	2.74	2.80	2.92	2.91	2.91	2.91	2.78
ESEER (4)		2.98	3.54	3.44	3.50	3.55	3.61	3.74	3.59
Sound power level (5)	(dBA)	93	94	94	95	95	95	95	96
Sound pressure level (6)	(dBA)	61	62	62	62	62	62	62	63
Number of circuit(s)		2	2	2	2	2	2	2	2
Number of compressors per circuit		2	2	2	2	2	2	2	2
Dimensions and weight (operating)									
Length	(mm)	6475	6475	7645	8610	8610	9580	10550	11520
Width	(mm)	2260	2260	2260	2260	2260	2260	2260	2260
Height	(mm)	2400	2400	2400	2400	2400	2400	2400	2400
Clearance A	(mm)	1500	1500	1500	1500	1500	1500	1500	1500
Clearance B	(mm)	1500	1500	1500	1500	1500	1500	1500	1500
Clearance C	(mm)	500	500	500	500	500	500	500	500
Clearance D	(mm)	1500	1500	1500	1500	1500	1500	1500	1500
Weight	(kg)	5604	6034	7161	8126	8228	9647	11543	11677
Electrical data									
Maximum amps	(A)	361	414	420	444	491	582	658	778
Start-up amps	(A)	669	746	752	776	833	886	808	1008

(1) With low ambient temperature option

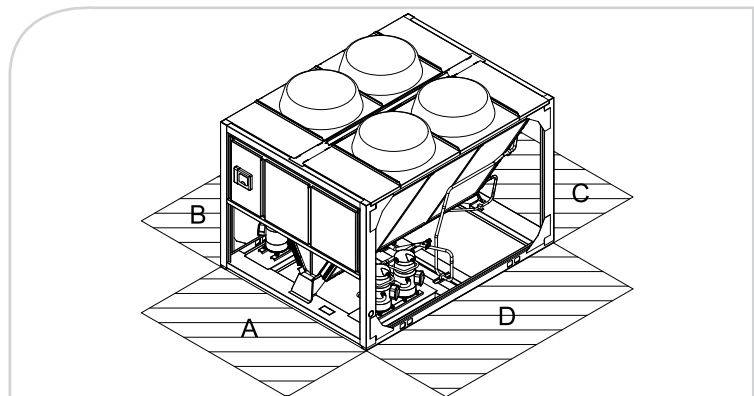
(2) With process cooling option

(3) At Eurovent conditions: 40/45°C entering/leaving water temperature and DB/WB 7°C/6°C ambient temperature according to EN 14-511

(4) At Eurovent conditions: 12/7°C entering/leaving water temperature and 35°C ambient temperature according to EN 14-511

(5) At Eurovent conditions, with 1pW reference sound power, according to ISO9614

(6) Average at 10 meters in a free field. This is non-contractual data, calculated from the above certified sound power level according to the formula $L_p = L_w - 10 \log 5$. This is an averaged value considering the unit as a parallelepiped box with five exposed face areas.



Heating operating outdoor air temperature range (min./max.)	(°C)	-7 / 20
Heating leaving water temperature range (min./max.)	(°C)	26 / 54
Cooling operating outdoor air temperature range (min./max.) (1)	(°C)	20 / 45
Cooling leaving water temperature range (min./max.) (2)	(°C)	-8 / 15
Power supply	(V/Ph/Hz)	400/3/50

RTXB Low Noise		480	510	560	630	650	770	910	1050
Net heating capacity (3)		531.5	553.5	607.5	660.5	6.94.1	803.1	84.5	1082.6
Total power input (3)		151.8	159.1	169.5	179.6	190.8	222.0	245.8	310.9
COP (3)		3.22	3.21	3.28	3.34	3.32	3.32	3.30	3.23
Cooling capacity (4)	(kW)	469.4	506.2	548.0	627.2	639.9	757.4	888.1	1034.5
Total power input (4)	(kW)	163.1	178.2	186.2	201.2	210.0	248.8	289.9	360.3
EER (4)		2.66	2.64	2.71	2.86	2.81	2.82	2.84	2.69
ESEER (4)		3.34	3.46	3.37	3.46	3.46	3.54	3.69	3.51
Sound power level (5)	(dBA)	91	92	92	93	93	93	93	94
Sound pressure level (6)	(dBA)	59	60	60	60	60	60	60	61
Number of circuit(s)		2	2	2	2	2	2	2	2
Number of compressors per circuit		2	2	2	2	2	2	2	2
Dimensions and weight (operating)									
Length	(mm)	6475	6475	7645	8610	8610	9580	10550	11520
Width	(mm)	2260	2260	2260	2260	2260	2260	2260	2260
Height	(mm)	2400	2400	2400	2400	2400	2400	2400	2400
Clearance A	(mm)	1500	1500	1500	1500	1500	1500	1500	1500
Clearance B	(mm)	1500	1500	1500	1500	1500	1500	1500	1500
Clearance C	(mm)	500	500	500	500	500	500	500	500
Clearance D	(mm)	1500	1500	1500	1500	1500	1500	1500	1500
Weight	(kg)	5604	6034	7161	8126	8228	9647	11543	11677
Electrical data									
Maximum amps	(A)	361	414	420	444	491	582	658	778
Start-up amps	(A)	669	746	752	776	833	886	808	1008

(1) With low ambient temperature option

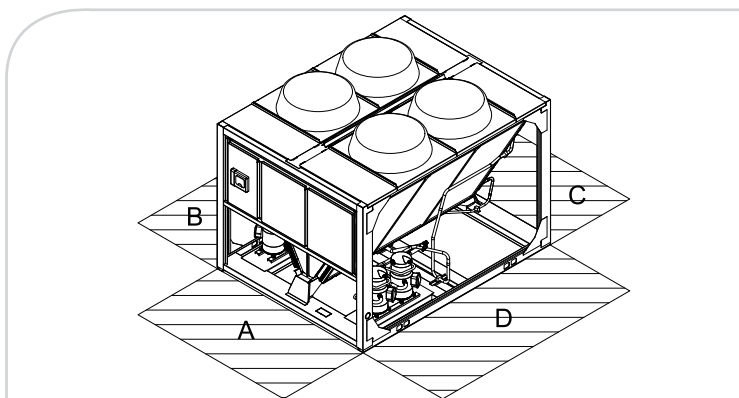
(2) With process cooling option

(3) At Eurovent conditions: 40/45°C entering/leaving water temperature and DB/WB 7°C/6°C ambient temperature according to EN 14-511

(4) At Eurovent conditions: 12/7°C entering/leaving water temperature and 35°C ambient temperature according to EN 14-511

(5) At Eurovent conditions, with 1pW reference sound power, according to ISO9614

(6) Average at 10 meters in a free field. This is non-contractual data, calculated from the above certified sound power level according to the formula $L_p = L_w - 10 \log S$. This is an averaged value considering the unit as a parallelepipedic box with five exposed face areas.



Heating operating outdoor air temperature range (min./max.)	(°C)	-7 / 20
Heating leaving water temperature range (min./max.)	(°C)	26 / 54
Cooling operating outdoor air temperature range (min./max.) (1)	(°C)	20 / 45
Cooling leaving water temperature range (min./max.) (2)	(°C)	-8 / 15
Power supply	(V/Ph/Hz)	400/3/50

RTXB Super Low Noise		480	510	560	630	650	770	910	1050
Net heating capacity (3)		482.3	498.6	552.8	638.4	687.2	798.2	895.5	1087.6
Total power input (3)		149.6	155.6	166.8	177.7	190.0	221.1	260.2	315.6
COP (3)		2.97	2.96	3.05	3.28	3.32	3.33	3.18	3.19
Cooling capacity (4)	(kW)	468.2	506.8	546.1	595.7	634.0	744.9	870.1	1009.6
Total power input (4)	(kW)	164.7	177.3	187.9	194.7	209.1	246.8	290.0	348.1
EER (4)		2.64	2.67	2.70	2.82	2.81	2.80	2.89	2.70
ESEER (4)		3.24	3.40	3.27	3.30	3.33	3.43	3.67	3.42
Sound power level (5)	(dBA)	88	89	89	90	90	90	90	91
Sound pressure level (6)	(dBA)	56	57	57	57	57	57	57	58
Number of circuit(s)		2	2	2	2	2	2	2	2
Number of compressors per circuit		2	2	2	2	2	2	2	2
Dimensions and weight (operating)									
Length	(mm)	6475	6475	7645	8610	8610	9580	10550	11520
Width	(mm)	2260	2260	2260	2260	2260	2260	2260	2260
Height	(mm)	2400	2400	2400	2400	2400	2400	2400	2400
Clearance A	(mm)	1500	1500	1500	1500	1500	1500	1500	1500
Clearance B	(mm)	1500	1500	1500	1500	1500	1500	1500	1500
Clearance C	(mm)	500	500	500	500	500	500	500	500
Clearance D	(mm)	1500	1500	1500	1500	1500	1500	1500	1500
Weight	(kg)	5604	6034	7161	8126	8228	9647	11543	11677
Electrical data									
Maximum amps	(A)	361	414	420	444	491	582	658	784
Start-up amps	(A)	669	746	752	776	833	886	808	1014

(1) With low ambient temperature option

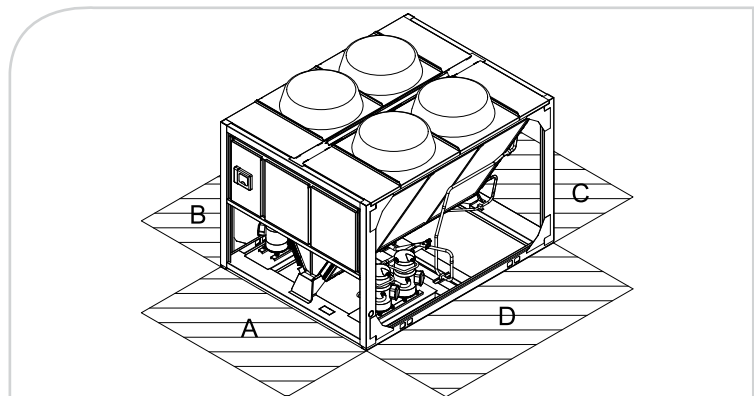
(2) With process cooling option

(3) At Eurovent conditions: 40/45°C entering/leaving water temperature and DB/WB 7°C/6°C ambient temperature according to EN 14-511

(4) At Eurovent conditions: 12/7°C entering/leaving water temperature and 35°C ambient temperature according to EN 14-511

(5) At Eurovent conditions, with 1pW reference sound power, according to ISO9614

(6) Average at 10 meters in a free field. This is non-contractual data, calculated from the above certified sound power level according to the formula $L_p = L_w - 10 \log S$. This is an averaged value considering the unit as a parallelepiped box with five exposed face areas.





CGWH

Water-to-water scroll heat pump



Customer benefits

- High performance heat pump
- Compact design
- Indoor installation: easy maintenance
- Minimum maintenance requirements

Main features

- High efficiency hermetic scroll compressors with low vibration and sound levels and full internal overheating protection
- Hot water leaving water temperature up to +50°C
- External sheet metal parts are galvanized and finished with powder paint RAL 9002
- Access panels are quickly removable using a square key
- Designed for indoor installation
- 380, 400 and 415V power voltage
- Phase and unbalance detection
- 400/220V transformer for the control

Options

- Compressor sound attenuating jackets
- High and low pressure gauges
- Evaporator water pump command - single or double
- Water filter
- Hydraulic module - for information, contact your local sales office

Tracer™ CH530 Control

Adaptive Control™ microprocessor-based control featuring:

- Easy to use operator interface
- Leaving hot water temperature control
- External linear reset, auxiliary and external water setpoint
- Compressor kW limiting (optional)
- Alarm indicator programmable relays (options)
- LonTalk® or Modbus® communication interface (optional)

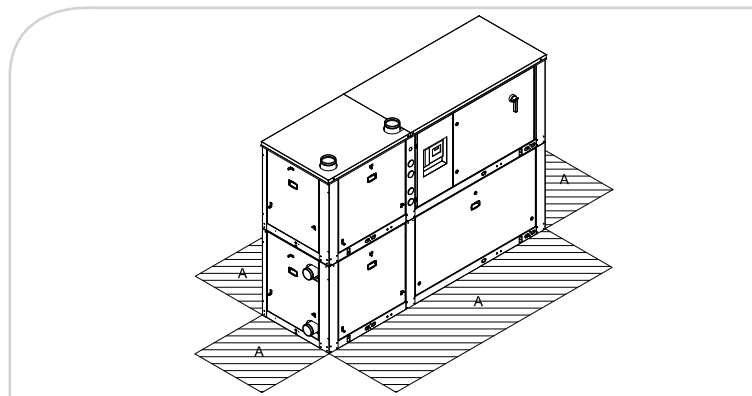
This description may not include all options and accessories available. For full technical information, visit engineer.trane.com

Hot water leaving water temperature (min./max.)	(°C)	20/50
Evaporator leaving water temperature range (min./max.)	(°C)	-12/12
Power supply	(V/Ph/Hz)	400/3/50

CGWH		115	120	125	225	230	235	240	250
Net heating capacity (1)	(kW)	64.5	81	97.6	114.2	129.9	145.9	161.8	195.2
Net power input (1)	(kW)	18.4	23.2	28	32.1	36.7	41.0	46.2	55.0
Net COP (1)		3.50	3.50	3.49	3.56	3.54	3.56	3.50	3.55
Number of refrigerant circuits		1	1	1	2	2	2	2	2
Number of compressors		2	2	2	3	3	3	4	4
Sound power level (2)	(dB(A))	75	79	81	81	82	83	82	84
Weight and dimensions (operating)									
Length	(mm)	1101	1101	1101	2072	2100	2135	2145	2082
Width	(mm)	800	800	800	866	866	866	866	866
Height	(mm)	1545	1545	1545	1545	1545	1545	1545	1545
Weight	(kg)	412	444	476	668	702	739	803	873
Clearance A	(mm)	800							
Electrical data									
Maximum amps	(A)	41	52	63	72	83	94	103	125
Start-up amps	(A)	140	194	204	212	222	232	241	261

(1) At 40/45°C entering/leaving hot water temperature and 12/7°C entering/leaving evaporator water temperature

(2) With 1pW reference sound power, according to ISO9614





CGWN

Water-to-water scroll heat pump



Customer benefits

High performance heat pump based on:

- Compact design and packaged hydraulic module (available as an option) for easier and faster installation
- Wide application flexibility for comfort and process applications
- State of the art control to guarantee superior dependability: low cost of ownership

Main features

- High efficiency hermetic scroll compressors with low vibration and sound levels and full internal overheating protections
- Hot water leaving water temperature up to +60°C
- Control of the condenser leaving water temperature
- External sheet metal parts are galvanized and finished with powder paint RAL 9002
- Access panels are quickly removable using a square key and mounted handles
- Designed for indoor and outdoor installation
- Full factory refrigerant and oil charge
- 380, 400 and 415V power voltage
- 400/110V transformer for the control
- Phase & unbalanced detection

Options

- High efficiency version
- Soft starter
- Water pumps command - single or double
- Compressor kW limiting
- Compressor sound attenuating jackets
- High and low pressure gauges
- Hydraulic module including:
 - single or dual evaporator pump including water filter and pressure tabs
 - speed inverter condenser pumps including flow control, water filter and pressure tabs for winter freeze protection
 - combinations of hydraulic modules available: evaporator only, condenser only or both

Tracer™ CH530 Control

Adaptive Control™ microprocessor-based control featuring:

- Easy to use operator interface
- External linear reset, auxiliary and external water setpoint
- Compressor kW limiting (optional)
- Alarm indicator programmable relays (options)
- LonTalk®, BACnet®, or Modbus® communication interface (optional)

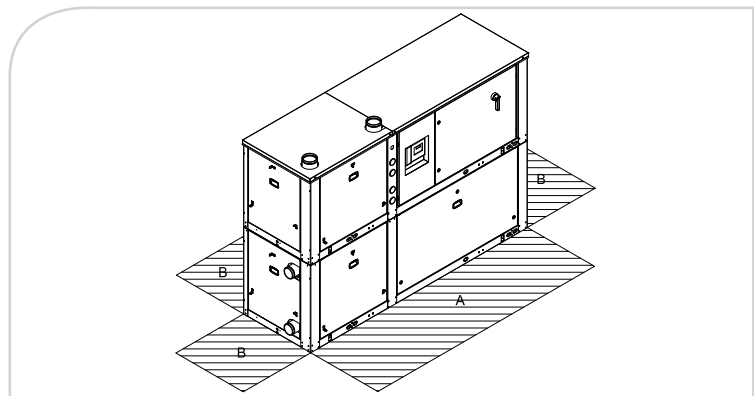
This description may not include all options and accessories available. For full technical information, visit engineer.trane.com

Hot water leaving temperature (min./max.)	(°C)	25/60
Evaporator water temperature range (min./max.)	(°C)	-12/15
Power supply	(V/Ph/Hz)	400/3/50

CGWN		205	205HE	206	206HE	207	207HE	208	209	210	211
Net heating capacity (1)	(kW)	213.9	221	254.7	261.8	296.1	303	328.8	361.8	400.9	441.8
Net power input (1)	(kW)	52.2	49.8	62.1	60.1	72.3	69.7	76.9	86.7	97.2	106.0
Net COP (1)		4.10	4.44	4.10	4.36	4.10	4.35	4.28	4.17	4.12	4.17
Refrigerant		R410A									
Number of refrigerant circuits		2									
Number of compressors		4									
Sound power level (2)	(dB(A))	82	82	82	82	83	83	83	84	84	84
Weight and dimensions (operating) (3)											
Length	(mm)	2545	2545	2545	2545	2545	2545	2545	2545	2545	2545
Width	(mm)	880	880	880	880	880	880	880	880	880	880
Height	(mm)	1842	1842	1842	1842	1842	1842	1842	1842	1842	1842
Weight	(kg)	1360	1460	1300	1450	1420	1470	1500	1650	1710	1790
Clearance A	(mm)	1000									
Clearance B	(mm)	800									
Electrical data	(V/Ph/Hz)	400/3/50									
Nominal amps	(A)	137	137	159	159	187	187	210	233	250	263
Start-up amps	(A)	278	278	334	334	395	395	418	441	512	525

CGWN		212	213	214	215
Net heating capacity (1)	(kW)	460.1	497.1	550.4	605.5
Net power input (1)	(kW)	124.1	136.2	149.9	157.9
Net COP (1)		3.71	3.65	3.67	3.83
Refrigerant		R407C			
Number of refrigerant circuits		2			
Number of compressors		5	6	6	6
Sound power level (2)	(dB(A))	87	88	88	90
Weight and dimensions (operating) (3)					
Length	(mm)	2866	2866	2866	2866
Width	(mm)	878	878	878	878
Height	(mm)	2025	2025	2025	2025
Weight	(kg)	2233	2443	2524	2639
Clearance A	(mm)	1000			
Clearance B	(mm)	800			
Electrical data					
Maximum amps	(A)	311	337	370	400
Start-up amps	(A)	563	588	621	655

- (1) At 40/45°C entering/leaving hot water temperature and 12/7°C entering/leaving evaporator water temperature
(2) With 1pW reference sound power, according to ISO9614 and without compressor enclosure
(3) Without hydraulic module





RTWD

Water-to-water helical-rotary heat pump



Customer benefits

High performance heat pump based on:

- Falling film evaporator: higher performances with lower refrigerant charge
- State-of-the-art control to guarantee superior dependability and low cost of ownership

Main features

- Low-speed, direct-drive semi-hermetic helical rotary compressor featuring only 3 moving parts, suction-gas-cooled motor
- Fully modulating load control (15-100%)
- 3 different levels of efficiency
- Control of the hot water leaving water temperature from CH530
- Maximum condenser temperature 60°C
- Compact physical footprint - fits through standard single-width door
- Bolt-together construction for easy unit disassembly
- Single power connection-reduced wiring costs
- Factory-mounted star-delta starter panel

Tracer™ CH530 Control

Adaptive Control™ microprocessor-based control featuring:

- Easy to use operator interface
- Water pump control

Control options:

- Programmable relays
- Reset of setpoints by analog signal
- Condenser refrigerant pressure output
- LonTalk®, BACnet®, Modbus® communication interfaces

This description may not include all options and accessories available. For full technical information, visit engineer.trane.com

Hot water leaving water temperature (min./max.)	(°C)	20/60
Evaporator leaving water temperature range (min./max.)	(°C)	-8/18
Power supply	(V/Ph/Hz)	400/3/50

RTWD		60HE	70HE	80HE	90HE	100HE	110HE	120HE	130HE	140HE	160HE	180HE
Gross heating capacity (1)	(kW)	260	311	354	402	431	462	497	533	585	641	704
Gross power input (1)	(kW)	57	68	78	89	94	100	107	114	125	136	151
Gross COP (1)		4.59	4.55	4.52	4.53	4.57	4.61	4.65	4.68	4.68	4.72	4.67
Refrigerant		R134a										
Number of refrigerant circuits		2										
Number of compressors		2										
Sound power level RTWD (3)	(dB(A))	90	90	97	99	99	99	98	96	96	96	101
Weights and dimensions (operating) (6)												
Length	(mm)	3210	3210	3210	3230	3320	3230	3240	3400	3400	3400	3490
Width	(mm)	1070	1070	1070	1060	1060	1060	1060	1280	1280	1280	1310
Height	(mm)	1940	1940	1940	1960	1960	1960	1960	1950	1950	1950	1970
Weight	(kg)	2650	2658	2673	2928	2970	3008	3198	3771	3802	3874	4042
Clearance A	(mm)	920										
Clearance B	(mm)	920	920	920	920	920	920	920	920	920	1020	1020
Electrical data												
Maximum amps	(A)	102	124	142	161	176	192	209	227	244	261	286
Start-up amps (4)	(A)	152	177	192	206	242	254	291	304	346	359	391

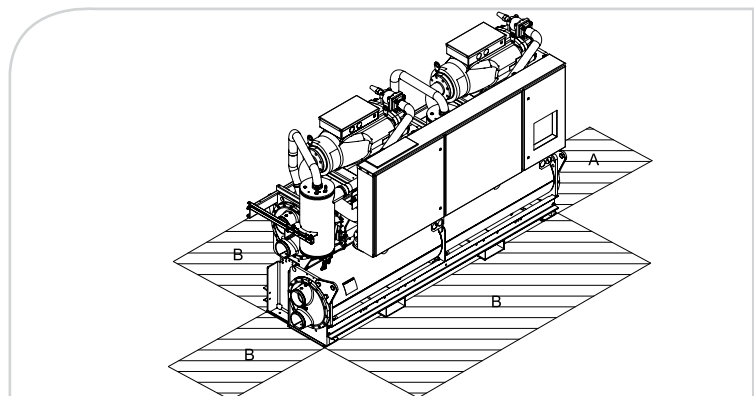
RTWD		200HE	220HE	250HE	160PE	180PE	200PE	160SE	170SE	190SE	200SE
Gross heating capacity (1)	(kW)	770	846	925	655	719	775	662	727	794	871
Gross power input (1)	(kW)	166	181	196	135	150	165	153	170	184	199
Gross COP (1)		4.65	4.66	4.71	4.84	4.80	4.71	4.31	4.28	4.32	4.38
Refrigerant		R134a									
Number of refrigerant circuits		2									
Number of compressors		2									
Sound power level RTWD (3)	(dB(A))	101	101	101	96	101	101	101	101	101	101
Weights and dimensions (operating) (6)											
Length	(mm)	3490	3490	3490	3760	3810	3490	3490	3490	3490	3490
Width	(mm)	1310	1310	1310	1280	1310	1310	1310	1310	1310	1310
Height	(mm)	2010	2010	2010	2010	2010	2010	1970	1970	1970	1970
Weight	(kg)	4488	4504	4579	4172	4408	4625	3874	4049	4086	4125
Clearance A	(mm)	920									
Clearance B	(mm)	1020	1020	1020	1020	1020	1020	1020	1020	1020	1020
Electrical data											
Maximum amps	(A)	311	343	374	261	286	311	286	311	343	374
Start-up amps (4)	(A)	410	473	497	359	391	410	391	410	473	497

(1) At 40/45°C entering/leaving hot water temperature and 12/7°C entering/leaving evaporator water temperature

(2) With 1pW reference sound power, according to ISO9614 and without compressor enclosure

(3) Inrush current in star connection

(4) Maximum dimensions and weight for this size





Notes

Handwriting practice lines consisting of 30 horizontal dotted lines.



TRANE®



Multi-pipe Units

The continuous drive to improve energy efficiency of building systems requires an optimal balancing in the demand and supply of both heating and cooling. Trane's multi-pipe units prove to be a sustainable solution for many applications.



CMAA/RTMA

Multi-pipe units with scroll or screw compressors



Customer benefits

- High diversity in comfort air conditioning and process applications with a simultaneous heating and cooling demand
- Full energy recovery to strongly reduce annual operating costs
- Autonomously handle all thermal loads while adjusting itself in order to optimize energy efficiency
- Simultaneous heating and cooling capacity control
- Different from a traditional reversible heat pump there are two separate heat exchangers for chilled and hot water production
- Simplicity: one unit provides both heating and cooling

Range description

CMAA: scroll compressor units

RTMA: screw compressor units

Main features

- “Best-in-class” energy efficiency – high efficiency heat exchangers and compressors
- Cross Exchange HX technology – avoids shutdowns caused by anti-freeze alarms
- ECO PROFILE fans
- Large operating map
- CMAA units can deliver up to 43°C hot water at -10°C outdoor air temperature
- RTMA units can deliver up to 50°C hot water at -10°C outdoor air temperature
- Dynamic Logic Control – an electronic controller managing the differential of the inlet water temperature on the basis of the speed of its variation
- Innovative electronic controller significantly decreases the number of defrosting cycles (up to 50 % less)
- Communication card RS485

Options

- Acoustic packages: low noise or super low noise
- Different built-in hydraulic kits available:
 - 1 cooling + 1 heating circuit pump 150 kPa / 250 kPa / 450 kPa
 - 1 standby cooling pump + 1 heating circuit pump, available in 150 kPa / 250 kPa / 450 kPa
- Electronically Commutated (EC) fans with innovative fan profile to reduce power input and noise emissions
- High leaving hot water temperature module
- Compressor sound attenuating jackets
- Condensing coil protection grilles
- Epoxy coated condensing coils
- Power factor correction to cos phi 0.91
- High static pressure fans (100 Pa)
- Control panel electric heater with thermostat
- Soft start
- Automatic circuit breakers

Accessories

- Remote control display
- Automatic water filling
- Water gauges /gas gauges
- Rubber or spring anti-vibration mounts

Controls

- Two completely independent circuits are controlled by 2 controllers, each handling a single circuit. The two controllers communicate with each other via the Modbus protocol.
- Ability to interface with the main BMS systems via RS485, or with I/O expansion modules via CanBus, or to control the unit via voltage free contacts
- Condenser/evaporator pressure control with variable fan speed modulation to allow low ambient operation down to -20°C (scroll) and -15°C (screw)
- Phase failure protection on compressors and fans
- Compressor starting with start-up and stop time control
- Compressor rotation with FIFO logic

This description may not include all options and accessories available. For full technical information, visit engineer.trane.com

CMAA, R410A refrigerant

Cooling mode operating outdoor air temperature range (min./max.)	(°C)	22/45 for Standard & SL 22/43 for LN
Cooling mode leaving water temperature range (min./max.)	(°C)	-10 / 18
Heating mode operating outdoor air temperature range (min./max.)	(°C)	-20 / 19
Heating mode leaving water temperature range (min./max.)	(°C)	22 / 60
Power supply	(V/Ph/Hz)	400/3/50

CMAA Standard		012	015	018	023	030	033	037	044	047	057	070	087	097	102	120	130	140
Cooling																		
Cooling capacity (1)	(kW)	44.6	55.2	63.5	80.7	106.1	117.8	131.4	153.7	165.8	201.2	249.5	307.5	340.1	361.9	421.6	460.0	485.0
Total power input	(kW)	15.8	17.7	21.9	24.8	34.8	37.8	44.1	49.4	53.8	67.7	78.5	102.2	109.4	114.2	134.7	148.4	156.5
EER		2.83	3.11	2.90	3.25	3.05	3.12	2.98	3.11	3.08	2.97	3.18	3.01	3.11	3.17	3.13	3.10	3.10
Heating																		
Heating capacity (2)	(kW)	51.7	62.3	73.3	92.8	118.7	140.4	156.4	183.2	197.0	235.7	279.3	346.6	383.0	407.4	472.0	530.0	557.0
Total power input	(kW)	16.8	19.1	22.8	28.2	38.3	41.9	47.4	56.0	60.2	73.7	84.1	102.2	114.0	120.9	134.1	150.6	161.0
COP		3.07	3.27	3.21	3.29	3.1	3.35	3.3	3.27	3.27	3.2	3.32	3.39	3.36	3.37	3.52	3.52	3.46
Heating + cooling																		
Cooling capacity (3)	(kW)	44.6	55.2	63.5	80.7	106.1	117.8	131.3	153.7	165.8	201.2	249.5	307.6	340.0	361.9	421.6	504.3	529.5
Heating capacity (3)	(kW)	58.4	71.0	83.4	102.6	138.0	152.6	172.4	197.1	213.6	263.0	322.0	403.7	440.5	467.0	547.4	639.1	674.6
DMEC (4)		7.5	8	7.4	8.4	7.7	7.8	7.4	8.1	7.9	7.5	7.9	7.4	7.8	7.9	7.7	8.5	8.3
Sound power level (5)	dB(A)	78	78	79	81	84	86	86	87	89	89	92	92	94	94	95	95	96
Sound pressure level (5)	dB(A)	46	46	47	49	52	54	54	55	57	57	60	60	62	62	63	62	63

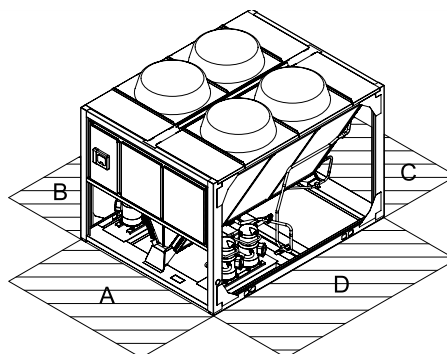
CMAA Low Noise		012 LN	015 LN	018 LN	023 LN	030 LN	033 LN	037 LN	044 LN	047 LN	057 LN	070 LN	087 LN	097 LN	102 LN	120 LN	130 LN	140 LN
Cooling																		
Cooling capacity (1)	(kW)	43.4	53.8	61.8	78.7	103.3	114.8	127.9	150.0	161.7	195.8	242.8	299.1	331.0	352.0	410.4	449.0	473.0
Total power input	(kW)	15.8	17.9	22.1	25.0	35.4	38.4	44.9	49.5	54.1	68.8	80.0	104.3	111.1	115.8	136.8	148.7	157.1
EER		2.75	3.01	2.80	3.15	2.92	2.98	2.85	3.03	2.99	2.85	3.03	2.87	2.98	3.04	3.00	3.02	3.01
Heating																		
Heating capacity (2)	(kW)	52.1	62.8	73.9	93.6	119.7	141.6	157.7	184.7	198.7	237.7	281.6	349.5	386.2	410.8	475.9	534	561
Total power input	(kW)	16.4	18.6	22.4	27.5	37.5	41.2	46.7	54.5	58.7	72.2	82.5	100.6	111.8	118.7	131.9	145.9	156.3
COP		3.18	3.38	3.30	3.40	3.19	3.44	3.38	3.39	3.38	3.29	3.41	3.47	3.46	3.46	3.61	3.66	3.59
Heating + cooling																		
Cooling capacity (3)	(kW)	44.6	55.2	63.5	80.7	106.1	117.8	131.3	153.7	165.8	201.2	249.5	307.6	340	361.9	421.6	504.26	529.53
Heating capacity (3)	(kW)	58.4	71	83.4	102.6	138	152.6	172.4	197.1	213.6	263	322	403.7	440.5	467	547.4	639.1	674.6
DMEC (4)		7.5	8	7.4	8.4	7.7	7.8	7.4	8.1	7.9	7.5	7.9	7.4	7.8	7.9	7.7	8.48	8.3
Sound power level (5)	dB(A)	76	76	77	79	82	84	84	85	87	87	90	90	92	92	93	93	94
Sound pressure level (5)	dB(A)	44	44	45	47	50	52	52	53	55	55	58	58	60	60	61	60	61

CMAA Super Low Noise		012 SL	015 SL	018 SL	023 SL	030 SL	033 SL	037 SL	044 SL	047 SL	057 SL	070 SL	087 SL	097 SL	102 SL	120 SL	130 SL	140 SL
Cooling																		
Cooling capacity (1)	(kW)	44.3	54.8	63.0	80.2	105.3	117.0	130.4	152.7	164.7	199.7	247.7	305.2	337.6	359.1	418.5	457	482
Total power input	(kW)	15.3	17.3	21.5	24.2	34.3	37.3	43.6	48.0	52.5	66.8	77.6	101.4	107.9	112.6	133.3	144.2	152.5
EER		2.89	3.16	2.93	3.31	3.07	3.14	2.99	3.18	3.14	2.99	3.19	3.01	3.13	3.19	3.14	3.17	3.16
Heating																		
Heating capacity (2)	(kW)	52.4	63.2	74.3	94.1	120.4	142.4	158.6	185.8	199.8	239	283.2	351.5	388.3	413.1	478.5	537	564
Total power input	(kW)	16.3	18.5	22.3	27.4	37.4	41.2	46.6	54.2	58.4	71.8	82.1	100.4	111.3	118.4	131.5	145.1	155.4
COP		3.21	3.41	3.33	3.43	3.22	3.46	3.40	3.43	3.42	3.33	3.45	3.50	3.49	3.49	3.64	3.70	3.63
Heating + cooling																		
Cooling capacity (3)	(kW)	44.6	55.2	63.5	80.7	106.1	117.8	131.3	153.7	165.8	201.2	249.5	307.6	340	361.9	421.6	504.3	529.5
Heating capacity (3)	(kW)	58.4	71	83.4	102.6	138	152.6	172.4	197.1	213.6	263	322	403.7	440.5	467	547.4	639.1	674.6
DMEC (4)																	8.48	8.3
Sound power level (5)	dB(A)	73	73	74	76	79	81	81	82	84	84	87	87	89	89	90	90	91
Sound pressure level (5)	dB(A)	41	41	42	44	47	49	49	50	52	52	55	55	57	57	58	57	58

- (1) Outdoor air temperature 35 °C – Outlet water temperature 12/7 °C
(2) Outdoor air temperature 7 °C – 90% UR – Outlet water temperature 45 °C
(3) Recovery water temperature 40/45 °C – Evaporator water temperature 12/7 °C
(4) DMEC = Dual Mode Efficiency coefficient - DMEC = (Cooling capacity + heating capacity)/Compressor Power Input
(5) According to ISO 3744. The sound pressure levels are average values calculated in free field with a reflective surface at 10 mt distance.

CMAA

Weights and dimensions (operating)	012	015	018	023	030	033	037	044	047	057	070	087	097	102	120	130	140
Number of refrigerant circuits	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	3	3
Number of compressors	2	2	2	2	2	2	2	2	4	4	4	4	4	4	4	6	6
Length (mm)	2300	2300	2300	3550	3550	3550	3550	3850	3850	3850	3850	3850	4460	4460	4460	7035	7035
Width (mm)	1350	1350	1350	1550	1550	1550	1550	2250	2250	2250	2250	2250	2250	2250	2250	2260	2260
Height (mm)	1550	1550	1550	1965	1965	1965	1965	2312	2312	2312	2312	2312	2312	2312	2312	2400	2400
Weight Standard (kg)	1189	1254	1289	1889	1924	1957	2014	2595	2632	2807	3030	3340	3582	3700	3876	4729	4835
Weight Low Noise (kg)	1189	1254	1289	1889	1924	1957	2014	2595	2632	2807	3030	3340	3582	3700	3876	4829	4935
Weight Super Low Noise (kg)	1245	1310	1345	1997	2032	2065	2122	2750	2787	2962	3185	3495	3757	3875	4051	5009	5115
Clearance A (mm)	1200	1200	1200	1200	1200	1200	1200	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500
Clearance B (mm)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Clearance C (mm)	1200	1200	1200	1200	1200	1200	1200	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500
Clearance D (mm)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800



RTMA, R134A refrigerant

Cooling mode operating outdoor air temperature range (min./max.)	(°C)	18 / 43
Cooling mode leaving water temperature range (min./max.)	(°C)	-8 / 18
Heating mode operating outdoor air temperature range (min./max.)	(°C)	-15 / 30
Heating mode leaving water temperature range (min./max.)	(°C)	25 / 60 - 25 / 65 with high leaving water temperature option
Power supply	(V/Ph/Hz)	400/3/50

RTMA Standard		105	115	120	130	150	170	180	190	210
Cooling										
Cooling capacity (1)	(kW)	368.7	407.7	426.0	463.5	529.2	594.2	626.2	66.3	733.0
Total power input	(kW)	125.5	139.2	146.0	152.1	174.1	186.8	200.4	21.3	235.0
EER		2.94	2.93	2.92	3.05	3.04	3.18	3.12	3.11	3.12
Heating										
Heating capacity (2)	(kW)	411.8	464.1	484.1	527.5	594.1	675.7	699.4	718.1	811.9
Total power input	(kW)	125.0	139.9	148.5	152.9	171.8	190.3	201.4	215.0	232.9
COP		3.29	3.32	3.26	3.45	3.46	3.55	3.47	3.34	3.49
Heating + cooling										
Cooling capacity (3)	(kW)	368.7	407.7	426.0	463.5	529.2	594.2	626.2	666.3	733.0
Heating capacity (3)	(kW)	482.2	534.9	557.0	600.6	685.3	763.0	808.6	859.7	947.0
Sound power level (4)	dB(A)	92	92	93	93	95	95	95	96	96
Sound pressure level (4)	dB(A)	60	60	60	60	62	62	62	63	63

RTMA Low Noise		105 LN	115 LN	120 LN	130 LN	150 LN	170 LN	180 LN	190 LN	210 LN
Cooling										
Cooling capacity (1)	(kW)	355.7	395.2	413.3	449.5	516	579.2	609.9	649.8	714.8
Total power input	(kW)	126.0	139.8	146.0	152.4	174.6	187.7	201.8	215.3	236.6
EER		2.82	2.83	2.83	2.95	2.96	3.09	3.02	3.02	3.02
Heating										
Heating capacity (2)	(kW)	416.4	469.3	489.6	533.0	600.0	682.4	706.4	725.2	820.0
Total power input	(kW)	122.3	137.3	144.9	149.5	167.7	186.2	197.4	210.2	228.2
COP		3.40	3.42	3.38	3.56	3.58	3.66	3.58	3.45	3.59
Heating + cooling										
Cooling capacity (3)	(kW)	368.7	407.7	426.0	463.5	529.2	594.2	626.2	666.3	733.0
Heating capacity (3)	(kW)	482.2	534.9	557.0	600.6	685.3	763.0	808.6	859.7	947.0
Sound power level (4)	dB(A)	90	90	91	91	93	93	93	94	94
Sound pressure level (4)	dB(A)	58	58	58	58	60	60	60	61	61

RTMA Super Low Noise		105 SL	115 SL	120 SL	130 SL	150 SL	170 SL	180 SL	190 SL	210 SL
Cooling										
Cooling capacity (1)	(kW)	365.1	404.2	422.5	459.6	525.6	590.1	621.7	661.8	728.0
Total power input	(kW)	122.9	136.6	142.3	148.7	170.1	182.7	196.7	210.1	230.4
EER		2.97	2.96	2.97	3.09	3.09	3.23	3.16	3.15	3.16
Heating										
Heating capacity (2)	(kW)	419.5	472.9	493.3	536.7	604.0	686.9	711.1	730.0	825.4
Total power input	(kW)	121.9	137.1	145.0	149.1	166.9	185.6	197.0	209.8	227.4
COP		3.44	3.45	3.41	3.60	3.62	3.70	3.61	3.48	3.63
Heating + cooling										
Cooling capacity (3)	(kW)	368.7	407.7	426.0	463.5	529.2	594.2	626.2	666.3	733.0
Heating capacity (3)	(kW)	482.2	534.9	557.0	600.6	685.3	763.0	808.6	859.7	947.0
Sound power level (4)	dB(A)	87	87	88	88	90	90	90	91	91
Sound pressure level (4)	dB(A)	55	55	55	55	57	57	57	58	58

(1) Outdoor air temperature 35 °C – Outlet water temperature 12/7 °C

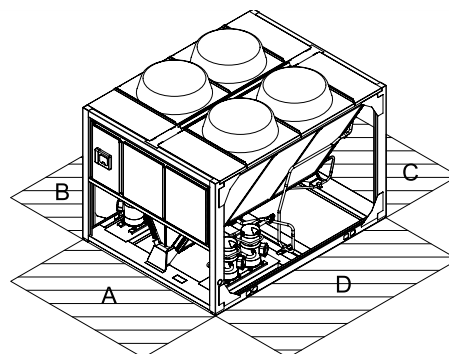
(2) Outdoor air temperature 7 °C - 90% UR - Outlet water temperature 45 °C

(3) Recovery water temperature 40/45 °C – Evaporator water temperature 12/7 °C

(4) According to ISO 3744. The sound pressure levels are average values calculated in free field with a reflective surface at 10 m distance.

RTMA

Weights and dimensions (operating)		105	115	120	130	150	170	180	190	210
Number of refrigerant circuits		2	2	2	2	2	2	2	2	2
Number of compressors		2	2	2	2	2	2	2	2	2
Length	(mm)	5431	5431	6601	6601	7561	7561	7561	8892	8892
Width	(mm)	2250	2250	2250	2250	2250	2250	2250	2250	2250
Height	(mm)	2400	2400	2400	2400	2400	2400	2400	2400	2400
Weight Standard	(kg)	5592	5799	6057	6121	6578	6925	6946	7199	7794
Weight Low Noise	(kg)	5592	5799	6057	6121	6578	6925	6946	7199	7794
Weight Super Low Noise	(kg)	5872	6079	6387	6451	6948	7295	7316	7619	8214
Clearance A	(mm)	1500	1500	1500	1500	1500	1500	1500	1500	1500
Clearance B	(mm)	1800	1800	1800	1800	1800	1800	1800	1800	1800
Clearance C	(mm)	3000	3000	3000	3000	3000	3000	3000	3000	3000
Clearance D	(mm)	1800	1800	1800	1800	1800	1800	1800	1800	1800





TRANE®



Airside Products

Incorporating the right airside products into your HVAC system is a critical part of creating world-class performance and reducing overall energy consumption.

By helping you select the right airside components, Trane can help address indoor air quality issues such as temperature and humidity, ventilation, mold, bacteria, other particulate matter, and noise.



CLCF Climate Changer™

Air handling units
for comfort applications



Customer benefits

Superior performance

- Airflow from 1000 m³/h to 45000 m³/h
- Wide array of fan technologies (forward, backward, plug fan) and coil options for greater unit flexibility

High energy efficiency

- Broad selection of energy recovery options (heat wheel, plate heat exchanger, coil loop)
- Increased energy efficiency performance - up to 90%
- EC plug fans

Reliable indoor air quality

- 4-point inclined floor serves as integrated drain pan
- Vertical natural drainage inhibits bacterial growth

Lower installed costs

- Integrated lifting lugs for easier handling
- Quick, unique and reliable tool-less connection system

Main features

- Frameless casing for reduced pressure drops
- 50 mm polyurethane foam-injected panels; homogenous inert/non-fibred insulation
- Internal thermal breaks and thermal break access doors
- 4-point inclined floor under sections creating condensate, promotes liquid run-off
- Centralized vertical drain
- Full perimeter integrated unit base frame
- Unitized structured panel design, minimizing seams that introduce air leak paths

- EPDM seamless gasket seals integrated into the door panels
- Eurovent Certified: casing air leakage: L1; casing strength: D1; filter bypass leakage: F9; thermal transmittance: T2; thermal bridging factor: TB2

Options

- Panel material: galvanized steel, painted galvanized steel, aluminum, stainless steel 304 or 316
- High density Rockwool insulation (80 kg/m³)
- Roof (standard or pitched), bird screens
- Sound attenuators

Controls

- Factory-engineered, mounted, and tested controls
- Quick connect wiring and cabling done in-factory
- Single power source for all machine power components (fan motors, electric heaters, etc.)
- Segregated cable change for easy service access and a protected, clean, and reliable cabling system
- Open protocol platform
- Possibility for connectivity to Building Management System
- Full commissioning provided by Trane experts

This description may not include all options and accessories available. For full technical information, visit engineer.trane.com



CLCP

Air handling units for comfort applications



Customer benefits

- Easy on-site installation and assembly via modular construction
- High casing thermal performances (50 mm panels with thermal break): T2/TB2 according to EN 1886

Main features

- Innovative closed box extruded aluminium section framework, with reinforced nylon corners
- Eurovent-certified units in accordance with EN 1886-25 mm panels: 2/A/F9/T3/TB3(F9: with back loading filter frame)- 50 mm TB panels: 2A/B/F9/T2/TB2(F9: with back loading filter frame)
- Modular 25 or 50 mm double skin panels insulated with CFC-free polyurethane foam
- Casing panels are held firmly in place onto the framework by the means of a self-locking wedge mechanism
- Outer skin with oven baked polyester powder painting
- Non-hydroscopic gasket compressed between the panels and the framework
- 120 mm-high unit base frame
- Access panels are easily and quickly removed for maintenance and cleaning
- 2-way sloping drain trays on all cooling coils and humidifier sections
- Available sections: panel filters, bag filters, rigid bag filters, activated carbon filters, absolute (HEPA) filters, cooling and heating coils, electric heaters, silencers, forward-

- curved fans, backward curved fans, run around coil loops, plate heat exchangers, thermal wheels, steam humidifiers
- Not CE compliant

Options

- Unique integral thermal breaks, providing a cold bridge free construction (available on 50 mm panel unit only)
- Hinged access doors mounted into a specially designed double skinned insulated door frame
- Panel skin material: 0.4 mm standard with optional 0.89 mm-thick skins
- Delivery in sections using break points

Accessories

- Manometers/magnehelic gauges
- Inspection windows
- Service light and switch
- Motors isolators
- Inverters
- Stainless steel drain pans

Controls (available in certain countries only)

- Factory-mounted controls including complete control panel
- Functionally tested prior to shipment
- MP581 programmable air handling unit controller
- Advanced and customized controls strategies
- Starters, variable frequency drives
- Sensors and actuators
- On-site commissioning

This description may not include all options and accessories available. For full technical information, visit engineer.trane.com



CLCF Climate Changer™

Air handling units for hospital, laboratory and pharmaceutical applications



Customer benefits

Reliable Indoor Air Quality

- 4-point inclined floor under sections creating condensate, promotes liquid run-off
- Centralized vertical drain
- Watertight casing for disinfection using liquid products
- Completely smooth interior panels and rounded corners

Superior Performance

- Airflow from 1000 m³/h to 45000 m³/h
- Wide array of fan technologies (forward, backward, plug fan) and coil options for greater unit flexibility

Lower Installed Costs

- Integrated lifting lugs for easier handling
- Quick, unique and reliable tool-less connection system

High Energy Efficiency

- Energy recovery options (plate heat exchangers, coil loops) - up to 75 % improved energy efficiency performance
- EC plug fans

Main features

- Frameless casing for reduced pressure drops
- 50mm polyurethane foam-injected panels; homogenous inert/non-fibred insulation
- Internal thermal breaks and thermal break access doors
- Full perimeter integrated unit base frame
- Unitized structured panel design, minimizing seams that introduce air leak paths

- EPDM seamless gasket seals integrated into the door panels
- Eurovent Certified: Casing air leakage: L1; casing strength: D1; filter bypass leakage: F9; thermal transmittance: T2; thermal bridging factor: TB2

Options

- 4-point inclined floor available for all unit sections in stainless steel 304 or 316 (or other materials)
- Eurovent Class 3 dampers EN 1751
- Antimicrobial copper coil fins
- Panel material: Galvanized steel, painted galvanized steel, aluminum, stainless steel 304 or 316
- High density Rockwool insulation (80 kg/m³)
- Roof (standard or pitched), bird screens
- Sound attenuators

Controls

- Factory-engineered, mounted, and tested controls
- Quick connect wiring and cabling done in-factory
- Single power source for all machine power components (fan motors, electric heaters, etc.)
- Segregated cable change for easy service access and a protected, clean, and reliable cabling system
- Open protocol platform
- Possibility for connectivity to Building Management System
- Full commissioning provided by Trane experts

This description may not include all options and accessories available. For full technical information, visit engineer.trane.com



CCTA – CCTB

Air handling units
for custom applications



Customer benefits

- Extreme flexibility in construction and dimensions to fit your exact requirements
- Easy installation via modular construction and easy module connection system
- Low energy consumptions with high efficiency components
- Cleanable and enhanced casing design for higher indoor air quality (CCTB)
- Available with Eurovent Class A energy class

Main features CCTA

- 30 standard unit sizes for airflow from 1000 to 140000 m³/h: indoor and outdoor versions
- Casing thermal performances: D1/L1/F9/T3/TB3 (Casing CCTA 50 mm PU) Eurovent certified
- Strong casing framework manufactured with extruded anti-corrosion aluminium profiles, fitted with nylon fibre glass stiffened angles
- Double sealing system to provide optimal casing air leakage
- Exclusive panel fixing system, with screwless panel-lock system, providing a neat external finishing
- 25 or 50 mm thick sandwich-type panels made of galvanized steel inside and white pre-painted steel outside
- Panel insulation made of CFC-free injected polyurethane foam
- Filters fitted on self compressive rail system
- Coil mounted on rails for easy removal
- Available components: panel and bag filters, HEPA filters, activated carbon filters, auto-roll filter, FC/BI/Aerofoil centrifugal fans, plug fans, water coils, DX coil, electric, heaters, steam coils, condensing coils, air washers,

steam humidifiers, evaporative humidifiers, atomizing humidifiers, plate heat exchangers, thermal wheels, run around coils, silencers, mixing chambers, multi-zone sections

Main features CCTB

- Same flexibility as CCTA range, with:
 - Aluminium frame work with integrated plastic thermal break
 - 40 mm thick panels with integrated thermal break, polyurethane foam insulation
 - Enhanced casing thermal performances: D1/L1/F9/T2/TB2 Eurovent certified
 - Smooth internal walls

Options

- High density Rockwool insulation (80 kg/m³)
- 60 mm thick panels (CCTB)
- Inner / outer skins made of peraluman, stainless steel 304 or 316 metal sheet

Accessories

- Inspection windows and wired lights
- Manometers and pressure switches
- Flexible connections, weather louvers, intake hoods, sand trap louvers

Controls (available in certain countries only)

- Factory-mounted controls including complete control panel
- Functionally tested prior to shipment
- MP581 programmable air handling unit controller
- Advanced and customized controls strategies
- Starters, variable frequency drives
- Sensors and actuators
- On-site commissioning



CCEC

Air handling units for custom and healthcare applications



Customer benefits

- High build quality and reliability, designed for the most demanding applications
- High flexibility to provide customized solutions
- Clean concept construction, designed to meet highest hygienic requirements
- Use the finest technologies available to provide the lowest specific fan power and energy consumptions
- Quick and easy installation and maintenance
- Available with Eurovent Class A energy class
- Compliant to EN13 053, VDI 6022 and DIN 1946

Main features

- Modular casing construction, Indoor and outdoor versions
- Vertically stacked, in line, side by side, L-shaped configuration
- 54 standard unit sizes. Airflows from 1000 to 140000 m³/h (0.3 to 38 m³/s)
- Bigger and special unit sizes to cover airflows up to 200000 m³/h upon request
- 50 mm double skin panels with mineral wool insulation
- Inner skin: galvanized steel, outer skin: PVC coated, white color
- High casing air leakage: Class C according to BS/DW144 & Eurovent 2/2 (0.42l/s/m² @ 2000 Pa)
- Mechanical classes (EN1886): D1/L1/F9/T2/TB2, Eurovent certified
- Smooth internal walls, minimized dust traps, easy to clean

- Available components: panel and bag filters, HEPA filters, activated carbon filters, auto-roll filter, FC/BI/aerofoil centrifugal fans, plug fans, water coils, DX coil, electric, heaters, steam coils, condensing coils, air washers, steam humidifiers, evaporative humidifiers, plate heat exchangers, thermal wheels, run around coils, silencers, mixing chambers, multi-zone sections

Options

- Plug fans with EC motors and fan walls (Class IE4)
- ATEX certified construction; group II, category 2 and 3
- Panel material: galvanized steel, PVC coating, Peraluman, stainless steel 304 and 316L
- All internal parts coated or made in stainless steel
- Flat packed/kit form delivery
- Inclined floor and anti-bacteriologic seals
- All components fitted on rails for easy removal
- Factory-installed controls

Accessories

- Inspection windows and wired lights
- Manometers and pressure switches
- Flexible connections, weather louvers, intake hoods, sand trap louvers
- Motor lifting beam, adjustable legs

This description may not include all options and accessories available. For full technical information, visit engineer.trane.com

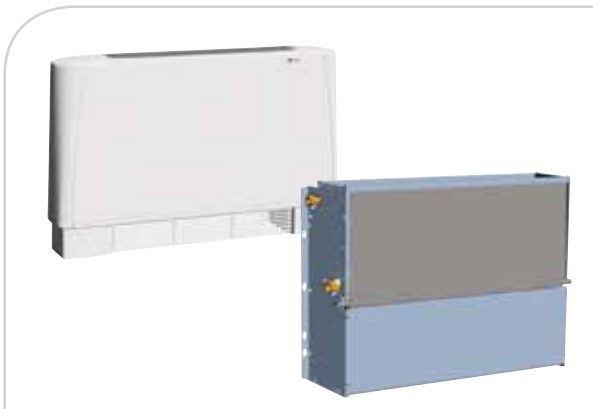
Controls

- Factory-installed controls including complete controls panels, sensors & actuators.
- Adjustable/variable speed fans with variable frequency drives or EC motors.
- Siemens controller, factory programmed.
- Tested and pre-commissioned prior shipment.
- Standalone or communicating system with BACnet® MS/TP, BACnet® IP, ModUS RTU, LON, or Webserver.

Energy saving options

- Class A energy classes as per Eurovent
- High efficiency heat recovery devices:
 - Sensible, enthalpy or sorption wheels
 - Plate heat exchangers up to 82% efficiency
 - Run around coils
- High efficiency plug fans
- IE3 class fan motors, EC motors Class IE4
- Adiabatic cooling systems
- Optimized controls strategies

	Air volume (m³/s) at coil face velocity (m/s)			Air volume (m³/h) at coil face velocity (m/s)			Overall width	Overall height
	2.0	2.5	3.0	2.0	2.5	3.0	(mm)	(mm)
CCEC	2.0	2.5	3.0	2.0	2.5	3.0	(mm)	(mm)
0.5	0.3	0.3	0.4	950	1188	1426	710	435
0.75	0.4	0.5	0.6	1331	1663	1996	710	587.5
0.75F	0.4	0.5	0.7	1577	1971	2365	1015	435
1	0.5	0.6	0.7	1711	2138	2566	710	740
1F	0.6	0.8	0.9	2203	2754	3305	1320	435
1.125	0.6	0.8	0.9	2208	2759	3311	1015	587.5
1.5	0.8	1.0	1.2	2838	3548	4257	1015	740
1.5F	0.9	1.1	1.3	3084	3856	4627	1320	587.5
2	1.1	1.4	1.7	3966	4957	5949	1320	740
2.25	1.2	1.5	1.8	4324	5405	6486	1015	1045
2.5	1.4	1.8	2.1	5093	6367	7640	1625	740
3	1.7	2.1	2.6	6169	7711	9253	1320	1045
3.75	2.2	2.8	3.3	7923	9904	11884	1625	1045
4	2.3	2.9	3.4	8249	10311	12374	1320	1350
4.5	2.6	3.3	4.0	9495	11869	14243	1930	1045
5	3.0	3.7	4.5	10752	13441	16129	1625	1350
6	3.6	4.5	5.4	12887	16108	19330	1930	1350
6.25	3.7	4.6	5.6	13375	16718	20062	1625	1655
7	4.3	5.3	6.4	15390	19238	23085	2235	1350
7.5	4.6	5.7	6.9	16537	20671	24805	1930	1655
8	5.0	6.2	7.5	17893	22367	26840	2540	1370
8.75	5.4	6.8	8.1	19440	24300	29160	2235	1655
9	5.5	6.8	8.2	19669	24586	29503	1930	1960
10	6.3	7.8	9.4	22602	28253	33903	2540	1675
10.5	6.5	8.2	9.8	23490	29363	35235	2235	1960
11.25	7.2	8.9	10.7	25764	32206	38647	2845	1675
12	7.6	9.5	11.4	27311	34139	40967	2540	1980
12.25	7.7	9.6	11.5	27540	34425	41310	2235	2265
12.5	8.0	10.0	12.1	28927	36158	43390	3150	1775
13.5	8.6	10.8	13.0	31132	38915	46698	2845	1980
14	8.9	11.1	13.3	32020	40025	48030	2540	2285
15	9.7	12.1	14.6	34953	43691	52430	3150	2080
15.75	10.1	12.7	15.2	36500	45625	54750	2845	2285
16	10.1	12.6	15.1	36197	45247	54296	2540	2590
16.5	10.8	13.4	16.1	38712	48389	58067	3455	2080
17.5	11.4	14.2	17.1	40980	51224	61469	3150	2385
18	11.3	14.2	17.0	40794	50992	61191	2845	2590
18F	11.8	14.8	17.7	42595	53244	63893	3760	2080
19.25	12.6	15.8	18.9	45386	56732	68079	3455	2385
19.5	12.9	16.1	19.3	46354	57942	69530	4065	2080
20	12.7	15.9	19.1	45801	57251	68701	3150	2690
21	13.9	17.3	20.8	49939	62424	74909	3760	2385
22	14.1	17.6	21.1	50725	63407	76088	3455	2690
22.75	15.1	18.9	22.6	54346	67932	81518	4065	2385
24	15.5	19.4	23.3	55814	69768	83722	3760	2690
24.5	15.4	19.2	23.0	55296	69120	82944	4370	2385
26	16.9	21.1	25.3	60739	75924	91109	4065	2690
26.25	16.5	20.6	24.8	59443	74304	89165	4675	2385
28	18.2	22.8	27.4	65664	82080	98496	4370	2690
30	19.6	24.5	29.4	70589	88236	105883	4675	2690
31.5	20.2	25.2	30.2	72576	90720	108864	4370	2995
32	21.0	26.2	31.5	75514	94392	113270	4980	2690
33.75	21.7	27.1	32.5	78019	97524	117029	4675	2995
36	23.2	29.0	34.8	83462	104328	125194	4980	2995



FCAS/FVAS/FKAS/ FCAE/FVAE/FKAE

UniTrane™ fan coil water terminals



Customer benefits

- Silent operation: high level of acoustic comfort
- Low cost of ownership: low energy consumption
- Easy to install and graceful cabinet design
- Ultimate filtration, high efficiency, and reduced pressure drop: CleanEffects™ electrostatic filters capture even the finest micrometric particles without compromising unit performance
- The integrated Trane Tracer™ control system combines with the entire range to deliver efficient performance, optimal comfort and cost-effective building management

Range description

FCAS: Cabinet model, vertical installation, with front return air grille with AC fan motor

FCAE: Cabinet model, vertical installation, with front return air grille with EC fan motor

FKAS: Concealed model, horizontal or vertical installation with AC fan motor

FKAE: Concealed model, horizontal or vertical installation with EC fan motor

FVAS: Cabinet model, vertical installation with AC fan motor

FVAE: Cabinet model, vertical installation with EC fan motor

Main features

- Efficient water exchanger
- Robust resilient air grille diffuser

- Multi-speed AC or speed modulating EC fan motor factory set to fit customer requirements
- Very quiet, aesthetic, robust and efficient units
- Cleanable EU3 filter

Options

- Factory-mounted unit support feet for FVAS/FVAE models
- Factory-mounted return air grille for FVAS/FVAE models
- Factory-mounted 2 and 3-way water valves with thermal or modulating actuators
- Wall or unit fitted thermostat interface
- Large choice of electric heater capacities per unit size
- High external static pressure available
- Right/left end water and control access sides
- Epoxy coated aluminum fins
- Fresh air intake connection

Accessories

- Adjustment valves
- Unit support feet
- Rear panel for installations against glass
- Electric heater
- Auxiliary condensate pump
- Fresh air intake louvers grille
- Inlet/outlet grilles for concealed installations

This description may not include all options and accessories available. For full technical information, visit engineer.trane.com

Controls

- Integrated Trane Tracer™ control system is provided factory-mounted, configured and tested
- Large choice of wall thermostats to cover all standalone unit applications
- Wireless remote control
- Connection of individual units or groups of units via serial link
- Factory-mounted LonMark™ Trane ZN controller providing enhanced acoustical and thermal comfort lowering the energy consumption for great efficiency operation
- Versatile group control, compatible with Modbus communication protocol
- Integration to the Trane Building Management System via ZN
- Full range of user interfaces for ZN controller to fit all customer needs for utilization of their installations and equipment with ZSM-10

AC fan motor unit: FVAS / FCAS / FKAS										
		11	12	21	22	31	32	33	34	41
Total cooling capacity L/M/H (1)	(kW)	0.59/0.86/1.03	0.67/1.02/1.23	0.91/1.25/1.56	1.01/1.43/1.81	1.57/1.78/2.39	1.65/1.89/2.57	1.73/2.14/2.87	1.83/2.28/3.12	2.03/2.94/3.18
Sensible cooling capacity L/M/H (1)	(kW)	0.47/0.71/0.86	0.51/0.79/0.97	0.69/0.97/1.24	0.74/1.07/1.38	1.15/1.32/1.8	1.2/1.38/1.9	1.28/1.6/2.19	1.34/1.68/2.34	1.51/2.23/2.43
Water flow (cooling) L/M/H (1)	(l/h)	102/148/177	115/176/212	157/215/269	174/246/312	270/307/412	284/326/443	298/369/494	315/393/537	350/506/548
Water pressure drop (cooling) L/M/H (1)	(kPa)	2.5/4.7/6.3	1.9/4/5.6	2.5/4.4/6.5	4.9/9.2/13.9	9.4/11.8/19.7	5.3/6.7/11.5	11.2/16.2/27.2	6.1/9/15.5	5.8/11.1/12.7
Heating capacity L/M/H (2)	(kW)	0.76/1.15/1.39	0.82/1.27/1.55	1.12/1.59/2.02	1.18/1.72/2.2	1.87/2.15/2.92	1.94/2.23/3.07	2.09/2.61/3.56	2.16/2.72/3.76	2.42/3.59/3.89
Electric heater capacity	(W)	650	650	400-600-1000	400-600-1000	600-900-1500	600-900-1500	600-900-1500	600-900-1500	750-1250-2000
Airflow at 0Pa (1)	(m³/h)	175	175	220	220	270	270	335	335	495
Fan power input (1)	(W)	25	25	22	22	25	25	28	28	39
Maximum fan motor input	(W)/(A)	33/0.16	33/0.16	40/0.18	40/0.18	49/0.23	49/0.23	57/0.26	57/0.26	61/0.27
Sound power level L/M/H (3)	(dB(A))	32/39/45	32/39/45	30/40/47	30/40/47	36/40/49	36/40/49	33/39/47	33/39/47	31/41/43
Cabinet unit dimensions (LxWxH) (4)	(mm)	694x225x530	694x225x530	794x225x530	794x225x530	1009x225x530	1009x225x530	1009x225x530	1009x225x530	1224x225x530
Weight (5)	(kg)	13	13	14	16	18	21	19	22	21
Concealed units dimensions (LxWxH) (6)	(mm)	415x218x511	415x218x511	515x218x511	515x218x511	730x218x511	730x218x511	730x218x511	730x218x511	945x218x511
Weight (5)	(kg)	9	10	13	15	18	20	19	21	21

Power supply: 230V/50Hz/1Ph

(1) Eurovent certified data for 2-pipe, air: 27°C/19°C, water: 7/12°C

(2) Eurovent certified data for 2-pipe, air: 20°C, water inlet: 50°C, cooling water flow

(3) Eurovent certified data according to Eurovent specification 8/2 (ISO 3741/88), standard motor

(4) For front return (FCA) and vertical return (FVA) model without feet. Add 100 mm to height for the version with feet

(5) Without water content, options, or accessories

(6) For unit without auxiliary drain pan or water valves kit

AC fan motor unit: FVAS / FCAS / FKAS (continued)

		42	43	44	51	52	61	62	63	64
Total cooling capacity L/M/H (1)	(kW)	2.19/3.25/ 3.54	2.54/3.37/ 4.09	2.83/3.86/ 4.79	3.34/4.29/ 5.11	2.83/3.86/ 4.79	3.74/5.19/ 5.82	4.03/5.73/ 6.47	4.47/5.87/ 6.74	4.88/6.54/ 7.6
Sensible cooling capacity L/M/H (1)	(kW)	1.6/2.4/ 2.63	1.91/2.59/ 3.2	2.07/2.86/ 3.6	2.5/3.27/ 3.95	2.07/2.86/ 3.6	2.88/4.12/ 4.68	3.04/4.43/ 5.06	3.49/4.73/ 5.55	3.72/5.11/ 6.05
Water flow (cooling) L/M/H (1)	(l/h)	377/560/ 610	438/580/ 704	487/665/ 825	575/739/ 880	487/665/ 825	644/894/ 1002	694/987/ 1114	770/1011/ 1161	841/1127/ 1309
Water pressure drop (cooling) L/M/H (1)	(kPa)	10.4/20.8/ 24.2	8.6/14.1/ 19.8	14.4/24.8/ 36.2	16.2/25.1/ 34.2	14.4/24.8/ 36.2	10.3/18.4/ 22.5	7.6/14.1/ 17.5	13.8/22.4/ 28.6	10.6/17.8/ 23.2
Heating capacity L/M/H (2)	(kW)	2.53/3.81/ 4.17	3.07/4.13/ 5.09	3.39/4.69/ 5.88	4.01/5.19/ 6.27	3.39/4.69/ 5.88	4.8/6.74/7.66	5.06/7.36/ 8.43	5.71/7.72/ 9.06	6.22/8.53/ 10.1
Electric heater capacity	(W)	750-1250- 2000	750-1250- 2000	750-1250- 2000	1000-1500- 2500	1000-1500- 2500	1000-1500- 2500	1000-1500- 2500	1000-1500- 2500	1000-1500- 2500
Airflow at 0Pa (1)	(m³/h)	495	590	590	735	735	1020	1020	1210	1210
Fan power input (1)	(W)	39	55	55	79	79	105	105	134	134
Maximum fan motor input	(W)/(A)	61/0.27	88/0.39	88/0.39	103/0.47	103/0.47	130/0.58	130/0.58	176/0.78	176/0.78
Sound power level L/M/H (3)	(dB(A))	31/41/43	37/46/52	37/46/52	42/51/56	42/51/56	45/56/60	45/56/60	50/58/64	50/58/64
Cabinet unit dimensions (LxWxH) (4)	(mm)	1224x225x530	1224x225x530	1224x225x530	1439x225x530	1439x225x530	1439x255x530	1439x255x530	1439x255x530	1439x255x530
Weight (5)	(kg)	24	22	25	26	30	35	41	36	42
Concealed units dimensions (LxWxH) (6)	(mm)	945x218x511	945x218x511	945x218x511	1160x218x511	1160x218x511	1160x248x511	1160x248x511	1160x248x511	1160x248x511
Weight (5)	(kg)	23	22	24	25	28	33	38	33	39

EC fan motor unit: FVAE / FCAE / FKAE

		21	22	33	34	43	44	51	52	63	64
Total cooling capacity L/M/H (1)	(kW)	0.74/1.19/ 1.61	0.78/1.33/ 1.88	1.42/2.19/ 2.97	1.44/2.28/ 3.19	1.97/2.94/ 3.99	2.06/3.2/ 4.54	2.61/3.7/ 4.98	2.62/3.84/ 5.34	3.47/4.86/ 6.36	3.61/5.25/ 7.14
Sensible cooling capacity L/M/H (1)	(kW)	0.56/0.93/ 1.3	0.57/0.99/ 1.44	1.04/1.65/ 2.28	1.04/1.68/ 2.41	1.47/2.23/ 3.11	1.49/2.35/ 3.41	1.93/2.79/ 3.84	1.91/2.84/ 4.03	2.65/3.83/ 5.2	2.71/4.03/ 5.63
Water flow (cooling) L/M/H (1)	(l/h)	127/205/ 277	134/229/ 324	245/377/ 512	248/393/ 549	339/506/ 687	355/551/ 782	450/637/ 858	451/661/ 920	598/837/ 1096	622/904/ 1230
Water pressure drop (cooling) L/M/H (1)	(kPa)	1.8/4/6.9	3.2/8/14.8	7.9/17/28.9	4/8.9/16.1	5.5/11.1/19	8.2/17.8/33	10.5/19.4/ 32.6	7.3/14.3/25.6	8.9/16.1/25.9	6.3/12.1/20.8
Heating capacity L/M/H (2)	(kW)	0.92/1.53/ 2.13	0.94/1.63/ 2.37	1.7/2.7/ 3.74	1.7/2.75/ 3.91	2.35/3.59/ 4.95	2.43/3.87/ 5.6	3.08/4.47/ 6.09	3.09/4.61/ 6.51	4.45/6.41/ 8.69	4.5/6.7/ 9.39
Electric heater capacity	(W)	400-600-1000	400-600-1000	600-900-1500	600-900-1500	750-1250- 2000	750-1250- 2000	1000-1500- 2500	1000-1500- 2500	1000-1500- 2500	1000-1500- 2500
Airflow	(m³/h)	220	210	350	340	495	475	610	585	945	910
Fan power input (1)	(W)	11	11	12	12	15	15	19	19	41	41
Maximum fan motor input	(A)	21	21	25	25	32	32	41	41	99	99
Sound power level (3)	(dB(A))	30/41/51	30/41/51	30/42/51	30/42/51	33/44/54	33/44/54	37/48/57	37/48/57	44/55/64	44/55/64
Cabinet unit dimensions (lxwxh) (4)	(mm)	794x225x530	794x225x530	1009x225x530	1009x225x530	1224x225x530	1224x225x530	1439x225x530	1439x225x530	1439x255x530	1439x255x530
Weight (5)	(kg)	14	16	19	22	22	25	26	30	36	42
Concealed units dimensions (lxwxh) (6)	(mm)	515x218x511	515x218x511	730x218x511	730x218x511	945x218x511	945x218x511	1160x218x511	1160x218x511	1160x248x511	1160x248x511
Weight (5)	(kg)	13	15	19	21	22	24	25	28	33	39

Power supply: 230V/50Hz/1Ph

(1) Eurovent certified data for 2-pipe, air: 27°C/19°C, water: 7/12°C

(2) Eurovent certified data for 2-pipe, air: 20°C, water inlet: 50°C, cooling water flow

(3) Eurovent certified data according to Eurovent specification 8/2 (ISO 3741/88), standard motor

(4) For front return (FCA) and vertical return (FVA) model without feet. Add 100 mm to height for the version with feet

(5) Without water content, options, or accessories

(6) For unit without auxiliary drain pan or water valves kit



FCD FED

UniTrane™ ductable fan coil water terminals



Customer benefits

- Silent operation: high level of acoustic comfort
- Factory-configured unit for ease of installation and immediate start-up
- Best of control technology to deliver a remarkable level of comfort

Range description

FCD: concealed horizontal fan coil with AC fan motor

FED: concealed horizontal fan coil with EC fan motor

Main features

- Low profile with 225 mm unit height fits in all narrow false ceiling voids
- Return and discharge air plenums to fit all types of duct requirements
- Up to 90 Pa external static pressure fit all ducting requirements
- Factory-configured fan speed setting according to customer requirements
- EU3 filter as standard

Options

- Large choice of electric heater capacity per unit size
- Factory-mounted 2 and 3-way water valves with thermal or modulating actuators
- Several models of discharge and return air plenums factory-mounted
- High external static pressure available
- Right/left end water and control access sides
- Epoxy-coated aluminum fins
- Fresh air intake connection on return or discharge airside
- All types of applications available associated with large choice of efficient exchangers

Accessories

- Constant volume dampers from 30 to 180 m³/h for fresh air intake
- Rubber shear isolator for silent operation
- Flexible hose pipe
- Discharge air grille with straight duct connection for lodging applications
- Conical water connection adapter

Controls

- Large choice of wall thermostats to cover all standalone unit applications
- Factory-mounted LonMark® Trane ZN525 controller for advanced energy saving with EC fan motor technology providing enhanced acoustical and thermal comfort performances providing great energy consumption reduction
- Factory-mounted LonMark® Trane ZN523 controller for AC fan motor providing enhanced acoustical and thermal comfort performances still with care for the best energy utilization
- Integration to the Trane Building Management System via ZN523
- Full range of user interfaces for ZN523/ZN525 controller to fit all customer needs for utilization of installations and equipment with ZSM-10 and ZSM-11
- Fuse protection with external access from the control box

Energy saving options

- EC fan motor allows for 65% annual energy savings

FCD		101	103	203	204	304	306	406	508	512	408	612	716	616	724
Airflow (at 0 Pa)	(m³/h)	188	271	321	415	438	642	642	1110	1329	1004	1411	1880	1890	2491
Airflow (at 50 Pa)	(m³/h)				145	152	425	419	565	614	902	912	1233	1281	1973
Total/sensible cooling capacity (at 0 Pa) (1)	(kW)	1.3/0.97	1.7/1.3	1.6/1.3	1.9/1.6	2.8/2.1	3.7/2.8	4.1/3.1	4.9/3.8	5.5/4.4	5.5/4.3	8.8/6.6	10.5/7.9	10.6/8.2	12.9/10
FCEER/Eurovent energy class (at 0 Pa) (1)		50/E	53/E	45/E	45/E	53/E	58/D	65/D	50/E	33/F	58/D	49/E	49/E	51/E	39/F
Heating capacity 2 pipe (at 0 Pa) (2)	(kW)	1.5	1.9	2.3	2.8	3.5	4.8	5.2	6.8	7.8	7.3	10.2	13.3	12.7	16.5
FCCOP/Eurovent energy class (at 0 Pa) (2)		55/E	59/E	66/E	63/E	67/E	75/D	78/D	64/E	45/F	72/D	54/E	61/E	58/E	49/F
Heating capacity 4 pipe (at 0 Pa) (2)	(kW)	1.1	1.3	1.7	1.9	2.4	2.9	3.1	6	6.5	3.7	7.9	9.1	8.6	10
FCCOP/Eurovent energy class (at 0 Pa) (2)		57/E	48/F	60/E	59/E	70/D	52/E	55/E	66/E	42/F	43/F	50/E	47/F	45/F	33/G
Sound power level (at 0 Pa)	(dB(A))	28/32/42	40/47/54	41/47/54	39/49/56	38/47/53	43/53/59	46/55/61	45/56/61	52/59/64	45/54/60	50/58/63	53/59/64	60/63/65	60/65/69
Sound pressure level (at 0 Pa) (3)	(dB(A))	19/23/33	31/38/45	32/38/45	30/40/47	29/38/44	34/44/50	37/46/52	36/47/52	43/50/55	36/45/51	41/49/54	44/50/55	51/54/56	51/56/60
NR Level (at 0 Pa)		17/17/25	28/34/40	29/34/40	27/37/43	25/34/40	30/41/47	34/43/48	32/43/48	36/45/51	31/40/46	35/43/49	38/45/50	46/49/51	46/51/55
NC Level (at 0 Pa)		16/15/23	26/33/39	27/33/39	26/35/41	23/32/39	29/39/45	32/41/46	30/41/46	35/44/49	29/38/44	34/41/49	37/44/49	45/47/50	44/49/54
Total/sensible cooling capacity (at 50 Pa) (1)	(kW)				0.81/0.64	1.1/0.81	2.6/2	2.9/2.1	3.7/2.7	3.3/2.4	4.3/3.3	6.3/4.5	7.8/5.8	7.7/5.6	10.7/8.1
EER/Eurovent energy class (at 50 Pa) (1)					24/E	31/D	29/D	28/D	47/C	45/C	42/C	53/C	51/C	47/C	45/C
Heating capacity 2 pipe (at 50 Pa) (2)	(kW)				1.2	1.3	3.3	3.5	4.5	4.2	5.7	6.9	8.9	9.5	13.5
COP/Eurovent energy class (at 50 Pa) (2)					32/D	34/D	33/D	32/D	58/C	56/C	53/C	61/B	59/C	56/C	54/C
Heating capacity 4 pipe (at 50 Pa) (2)	(kW)				1.2	1.5	1.7	2.3	1.8	2.5	2	2.9	4.4	4.3	5.3
COP/Eurovent energy class (at 50 Pa) (2)					41/C	49/C	42/C	45/C	37/D	54/C	42/C	49/C	52/C	49/C	35/D
Supply sound power level (dB(A)) (speed 1/3/5)	(dB(A))				39/45/47	38/46/47	45/50/54	42/48/51	42/49/52	46/53/57	50/54/58	47/50/54	54/55/56	52/54/56	55/57/58
Return sound power level (dB(A)) (speed 1/3/5)	(dB(A))				42/48/50	43/49/51	47/52/55	45/50/53	40/47/51	51/56/59	53/56/59	50/53/56	56/57/59	59/61/63	57/58/61
Radiated sound power level (dB(A)) (speed 1/3/5)	(dB(A))				31/40/44	31/40/43	33/42/47	33/41/47	42/48/53	42/48/53	44/48/53	44/49/53	52/52/54	51/52/54	52/53/54
NR level (at 50 Pa., high speed)	(dB(A))				31/40/44	31/40/43	33/42/47	33/41/47	42/48/53	42/48/53	44/48/53	44/49/53	52/52/54	51/52/54	52/53/54
NC level (at 50 Pa., high speed)	(dB(A))				20/25/27	18/25/27	24/31/34	24/31/34	22/30/34	27/33/36	31/34/37	27/30/33	34/35/36	37/39/40	35/37/39
Weights and dimensions															
Width	(mm)	704	704	854	854	1084	1084	1234	1334	1334	1234	1634	1634	1634	1634
Depth	(mm)	558	558	558	558	558	558	558	704	704	558	704	796	704	796
Height	(mm)	225	225	225	225	225	225	225	225	225	225	225	225	225	277
Operating weight	(kg)	13	13	16	15	20	21	24	30	32	25	41	47	42	47
Electrical data															
Fan motor absorbed power (at 0 Pa)	(W)	11/16/27	18/25/40	19/26/41	23/37/54	26/42/61	36/58/82	36/59/82	53/87/124	118/139/164	53/87/118	119/145/171	154/187/221	157/189/222	252/294/346
Fan motor absorbed power (at 50 Pa)	(W)				21/42/50	24/47/56	36/73/90	36/73/90	52/100/120	52/101/122	105/131/143	105/132/143	128/147/171	130/151/175	224/272/299
Electric heater capacity range	(W)	-	500	500/750	500/1000	500/1500	500/2000	500/2000	1500/3000	1500/4000	1500/4001	1500/4002	1500/4003	1500/4004	1500/4005
Electric heater current	(A)	-	2.2	2.2/3.3	2.2/4.3	2.2/6.5	2.2/8.7	2.2/8.7	6.5/13	6.5/17.4	6.5/17.4	6.5/17.4	6.5/17.4	6.5/17.4	6.5/17.4
Power supply	(V/Ph/Hz)	230-1-50													

FED		100	200	300	400
Airflow (at 0 Pa)	(m³/h)	310	441	609	924
Airflow (at 50 Pa)	(m³/h)	-	104	376	405
Total/sensible cooling capacity (at 0 Pa) (1)	(kW)	1.4/1.1	1.9/1.6	3.3/2.5	4.9/3.8
FCEER/Eurovent energy class (at 0 Pa) (1)		186/B	185/B	174/B	191/B
Heating capacity 2 pipe (at 0 Pa) (2)	(kW)	3.2	4.5	7.3	10.7
FCCOP/Eurovent energy class (at 0 Pa) (2)		393/A	189/B	301/A	436/A
Heating capacity 4 pipe (at 0 Pa) (2)	(kW)	1.2	1.8	2.3	3.4
FCCOP/Eurovent energy class (at 0 Pa) (2)		195/B	221/B	164/B	164/B
Sound power level (at 0 Pa)	(dB(A))	32/41/49	35/45/53	37/52/61	43/53/60
Sound pressure level (at 0 Pa) (3)	(dB(A))	23/32/40	26/36/44	28/43/52	34/44/51
NR level (at 0 Pa)		21/28/36	22/31/40	24/38/49	33/40/47
NC level (at 0 Pa)		19/27/34	20/30/38	22/37/47	32/39/46
Total/sensible cooling capacity (at 50 Pa) (1)	(kW)	-	0.65/0.5	2.3/1.7	2.8/2
EER/Eurovent energy class (at 50 Pa) (1)		-	84/B	100/A	101/A
Heating capacity 2 pipe (at 50 Pa) (2)	(kW)	-	0.81	3	3.3
COP/Eurovent energy class (at 50 Pa) (2)		-	98/A	191/A	227/A
Heating capacity 4 pipe (at 50 Pa) (2)	(kW)	-	0.62	2.6	5.7
COP/Eurovent energy class (at 50 Pa) (2)		-	128/A	105/A	108/A
Supply sound power level (dB(A)) (speed 1/3/5)	(dB(A))	39/45/47	32/38/47	39/46/56	40/45/53
Return sound power level (dB(A)) (speed 1/3/5)	(dB(A))	42/48/50	35/40/48	40/47/56	43/47/54
Radiated sound power level (dB(A)) (speed 1/3/5)	(dB(A))	31/40/44	29/34/42	31/37/46	40/42/47
NR level (at 50 Pa, speed 3)	(dB(A))	-	13/17/25	19/26/36	20/25/35
NC level (at 50 Pa, speed 3)	(dB(A))	-	10/15/24	17/25/34	18/24/33
Weights and dimensions					
Width	(mm)	704	854	108	123
Depth	(mm)	558	558	558	558
Height	(mm)	225	225	225	225
Operating weight	(kg)	14	16	21	25
Electrical data					
Fan motor absorbed power (at 0 Pa)	(W)	3.3/5.8/12	3.7/8.7/19	4.8/18/43	8.9/23/54
Fan motor absorbed power (at 50 Pa)	(W)	21/42/50	24/47/56	36/73/90	36/73/90
Electric heater capacity range	(W)	-	-	500	500/750
Electric heater current	(A)	-	-	2.2	2.2/3.3
Power supply	(V/Ph/Hz)	230-1-50			

(Speed 1/3/5): speed low/medium/high

(1) At Eurovent conditions: (air: 27°C/47% humidity, water inlet/outlet: 7/12°C) high speed

(2) At Eurovent conditions: 2-pipe air 20°C, water +50°C inlet; 4-pipe air 20°C, water +70/60°C inlet/outlet

(3) Values calculated from sound power levels with a hypothetical acoustic attenuation of 9 dB



FWD

Ductable water terminals



Customer benefits

- Wide capacity range with large static pressure capabilities
- Very easy installation of accessories on-site

Main features

- 3-speed direct drive centrifugal fan motor
- Reinforced aluminum foiled insulation
- Supporting brackets
- Access from the bottom to fan motor and filter
- Return air filter assembly on back or to the bottom side of the unit
- Self-contained condensate tray include location for centrifugal drain pump accessory

Options

- Duct connections
- Additional heat processes

Accessories

- Return and supply duct plenum with round spigots
- EU2 and EU4 return air filter box
- Electric heater box
- Hot water coil box
- 3-way motorized water valve for main coil and hot water coil
- Centrifugal condensate pump
- Changeover thermostat for 2-pipe application

Controls

Suitable connection to all kinds of controls for standalone applications with a large choice of wall thermostats, or to all Building Management System controls including the Trane Tracer™ LonTalk® ZN523 with ZSM-10 and ZSM-11 user interfaces.

FWD		8	12	20	30	45
Airflow (at 50 Pa)	(m³/h)	694	1467	2149	3025	5474
Total/sensible cooling capacity (at 50 Pa) (1)	(kW)	4.6/3.5	7.6/6.2	14.4/11	18.9/14.7	34.2/26.7
FCEER		33/D	24/E	26/D	21/E	32/D
Heating capacity (at 50 Pa) (2)	(kW)	5.5	10.6	17.9	21.3	44.2
FCCOP		40/D	33/D	32/D	24/E	41/C
Global sound power level (speed 1/2/3)	(dB(A))	57/63/65	58/65/72	64/72/76	66/72/78	73/76/79
Weights and dimensions						
Width	(mm)	890	1090	1290	1290	1290
Depth	(mm)	600	710	820	970	1090
Height	(mm)	250	300	350	450	650
Operating weight	(kg)	32	46	61	76	118
Electrical data						
Fan motor absorbed power (at 50 Pa)	(W)	115/136/213	250/328/447	415/569/713	720/928/1196	902/1202/1570
Electric heater capacity	(W)	2/4	8	10	12	12
Electric heater current	(A)	2.9/5.8	11.5	14.4	17.3	17.3
Power supply	(V/Ph/Hz)	230-1-50				

(1) At conditions: (Air: 27°C/47% humidity, water inlet/outlet: 7/12°C) medium speed (speed 2)

(2) At conditions: 2-pipe air 20°C, water +50°C inlet



CWS CWE

4-way cassette water terminals



Customer benefits

- Silent operation: high level of acoustic comfort
- 4-way air diffusion with excellent Coanda effect
- Factory-configured unit for ease of installation for immediate start-up
- Best of control technology to deliver a remarkable level of comfort

Range description

CWS: Cassette with AC fan motor

CWE: Cassette with EC fan motor

Main features

- Low profile with 296 or 329 mm unit height fits in all narrow false ceiling voids
- Standard AC or advanced EC fan motor technology
- 3 factory-set fan speeds
- Factory-mounted centrifugal drain pump
- Adjustable discharge louvers
- Fresh intake connections on three sides
- Discharge air connections on two sides
- Return air sensor with infrared remote or electronic user interface controls

Options

- Factory-mounted electric heater
- All type of applications available associated with large choice of efficient exchangers
- Tracer LonTalk® controls with water valves and thermal or modulating water valves
- Infrared remote control to be mounted on-site

Accessories

- On/off 2 and 3-way water valve with thermal actuators
- Fresh air spigots

Controls

- Large choice of wall thermostats to cover all standalone unit applications
- Factory-mounted LonMark® Trane ZN525 controller for advanced energy saving with EC fan motor technology providing enhanced acoustical and thermal comfort performances providing great energy consumption reduction
- Factory-mounted LonMark® Trane ZN523 controller for AC fan motor providing enhanced acoustical and thermal comfort performances still with care for the best energy utilization
- Integration to the Trane Building Management System via ZN523
- Full range of user interfaces for ZN523/ZN525 controller to fit all customer needs for utilization of installations and equipment with ZSM-10/ZSM-11
- Fuse protection with external access from the control box with Trane Tracer Lontalk® ZN controllers
- Group control up to 20 units using infrared remote control or the wall-mounted user interface ETN/ECM with ambient sensor

Energy saving options

- EC fan motor allows for 60% annual energy savings

CWS 2 pipe		00-2P	01-2P	02-2P	03-2P	04-2P	05-2P	06-2P
Airflow	(m³/h)	610	520	710	880	1140	1500	1820
Total/sensible cooling capacity (1)	(kW)	1.98/1.64	2.68/2.04	4.33/3.18	5.02/3.74	6.16/4.59	9.51/6.94	11.1/8.25
FCEER/Eurovent energy class (1)		49/E	72/D	82/C	78/D	114/C	114/C	102/C
Heating capacity (2)	(kW)	2.6	3.4	5.2	6.2	7.8	11.7	8.3
FCCOP/Eurovent energy class (2)		63/E	88/D	95/D	93/D	139/C	134/C	121/C
Sound power level	(dB(A))	49	45	53	59	48	53	58
Sound pressure level (3)	(dB(A))	40	36	44	50	39	44	49
NR level	(dB(A))	24	24	30	34	27	26	34
NC level	(dB(A))	22	22	28	33	26	25	32
Weight and dimensions								
Length	(mm)	575	575	575	575	820	820	820
Width	(mm)	575	575	575	575	820	820	820
Height	(mm)	275	275	275	275	303	303	303
Operating weight	(kg)	25	27	27	27	42	45	45
Electrical data								
Fan motor absorbed power	(W)	57	44	68	90	77	120	170
Electric heater capacity	(W)	0.75	1.5	2.5	2.5	3.0	3.0	3.0
Electric heater current	(A)	3.3	6.5	10.9	10.9	13.0	13.0	13.0
Power supply	(V/Ph/Hz)	230-1-50						

CWE 2 pipe		01-2P	02-2P	03-2P	04-2P	05-2P
Airflow	(m³/h)	535	710	880	1165	1770
Total/sensible cooling capacity (1)	(kW)	2.75/2.09	4.33/3.18	5.02/3.74	6.33/4.72	10.75/7.94
FCEER/Eurovent energy class (1)		308/A	319/A	221/A	347/A	293/A
Heating capacity (2)	(kW)	3.4	5.2	6.2	8.0	12.7
FCCOP/Eurovent energy class (2)		375/A	370/A	260/B	425/A	331/A
Sound power level	(dB(A))	47	54	60	48	57
Sound pressure level (3)	(dB(A))	38	38	38	38	38
NR level	(dB(A))	22	27	34	22	30
NC level	(dB(A))	21	25	32	21	28
Weight and dimensions						
Length	(mm)	575	575	575	820	820
Width	(mm)	575	575	575	820	820
Height	(mm)	275	275	275	303	303
Operating weight	(kg)	25	27	27	27	42
Electrical data						
Fan motor absorbed power	(W)	16	31	62	33	108
Electric heater capacity	(W)	1.5	2.5	2.5	3	3
Electric heater current	(A)	6.5	10.9	10.9	13	13
Power supply	(V/Ph/Hz)	230-1-50				

CWS 4 pipe		00-4P	01-4P	02-4P	03-4P	04-4P	05-4P	06-4P
Airflow	(m³/h)	610	520	710	880	1140	1500	1820
Total/sensible cooling capacity (1)	(kW)	2.33/1.9	2.7/1.98	3.34/2.56	3.81/2.97	6.34/4.69	7.71/5.83	8.89/6.84
FCEER/Eurovent energy class (1)		59/D	73/D	66/D	62/D	114/C	96/C	85/C
Heating capacity (2)	(kW)	401.0	464.0	574.0	655.0	1090.0	1326.0	6.8
FCCOP/Eurovent energy class (2)		76/D	95/D	86/D	81/D	163/B	137/C	122/C
Sound power level	(dB(A))	14.5	10.8	16.6	20.5	21.4	29.9	38.8
Sound pressure level (3)	(dB(A))	50	45	53	59	48	53	58
NR Level	(dB(A))	24	24	30	34	27	26	34
NC Level	(dB(A))	22	22	28	33	26	25	32
Weight and dimensions								
Length	(mm)	575	575	575	575	820	820	820
Width	(mm)	575	575	575	575	820	820	820
Height	(mm)	275	275	275	275	303	303	303
Operating weight	(kg)	25	27	27	27	42	45	45
Electrical data								
Fan motor absorbed power	(W)	41	36	44	50	39	44	49
Electric heater capacity	(W)	0.75	1.5	2.5	2.5	3.0	3.0	3.0
Electric heater current	(A)	3.3	6.5	10.9	10.9	13.0	13.0	13.0
Power supply	(V/Ph/Hz)	230-1-50						

CWE 4 pipe		01-4P	02-4P	03-4P	04-4P	05-4P
Airflow	(m³/h)	476	676	779	1120	1697
Total/sensible cooling capacity (1)	(kW)	2.08/2.77	2.95/3.93	3.46/4.53	4.83/6.54	7.4/9.87
FCEER/Eurovent energy class (1)		226/A	213/A	148/B	256/A	196/A
Heating capacity (2)	(kW)	311.0	288.0	326.0	805.0	818.0
FCCOP/Eurovent energy class (2)		406/A	273/A	182/A	507/A	280/A
Sound power level	(dB(A))	47	54	60	48	57
Sound pressure level (3)	(dB(A))	38	38	38	38	38
NR level	(dB(A))	22	27	34	22	30
NC level	(dB(A))	21	25	32	21	28
Weight and dimensions						
Length	(mm)	575	575	575	820	820
Width	(mm)	575	575	575	820	820
Height	(mm)	275	275	275	303	303
Operating weight	(kg)	25	27	27	27	42
Electrical data						
Fan motor absorbed power	(W)	16	31	62	33	108
Electric heater capacity	(W)	1.5	2.5	2.5	3	3
Electric heater current	(A)	6.5	10.9	10.9	13	13
Power supply	(V/Ph/Hz)	230-1-50				

(1) At Eurovent conditions: 27/19°C return air temperatures and 7/12°C inlet and outlet water temperatures

(2) At Eurovent conditions: 2-pipe air 20°C, water +50°C inlet; 4-pipe air 20°C, water +70/60°C inlet/outlet

(3) Values calculated from sound power levels with a hypothetical acoustic attenuation of 9 dB



CFAS CFAE

1-way cassette water terminals



Customer benefits

- Air distribution through perfect Coanda effect for a high level of comfort
- Silent operation: high level of acoustic comfort
- Factory-configured unit controls for ease of installation and immediate start up
- Best of control technology to deliver a remarkable level of comfort
- Excellent air filtering with the louvered return air grill design which frees up 100% of opening space to the filter

Range description

CFAS: cassette with AC fan motor

CFAE: cassette with EC fan motor

Main features

- Low profile with 306 mm unit height fits in all narrowed false ceiling voids
- Louvered linear return air grill with 45° pitch angle avoid mix of supply and return air
- Supply air round dampers with 4 jaws sized to optimize the air throw with perfect Coanda effect at all fan speed
- 3 fan speeds factory set, adjustable on-site
- Fresh intake connections on two return airsides

Options

- Raised plenum version increases the condensate gravity drainage capability up to 160 mm
- G0 or EU3 filter factory-mounted

- 2 fan speeds factory set for perfect capacity and sound fit to air-conditioning load
- Factory-mounted electric heater, drain pump, 2 and 3-way water valves
- Factory-mounted controls for standalone, master/slave and Building Management System applications

Accessories

- Constant volume dampers from 30 to 180 m³/h associated with Ø 99 or Ø124 mm spigot
- Auxiliary drain pan for left or right hand
- On/off 2 and 3-way water valve with thermal actuators
- Large selection of thermostats

Controls

- Large choice of wall thermostats to cover all standalone unit applications
- Up to 20 units group control with infrared or wall-mounted thermostat interface
- Factory-mounted LonMark™ Trane ZN523 controller for enhanced ambient temperature and sound comfort minimizing energy consumption to be connected to the Trane Building Management System
- Full range of user interfaces for ZN523 controller with ZSM-10 and ZSM-11
- Fuse protection with external access from the control box with Trane Tracer Lontalk® ZN523 controller

Energy saving options

- EC fan motor allows for 60% annual energy

This description may not include all options and accessories available. For full technical information, visit engineer.trane.com

CFAS High Efficiency		16			26			36		
		Low	Medium	High	Low	Medium	High	Low	Medium	High
Airflow (at 0 Pa)	(m³/h)	140	180	280	200	240	380	360	540	620
Total/sensible cooling capacity (1)	(kW)	1.2/0.9	1.5/1.2	1.7/1.3	1.7/1.2	2.6/1.9	3.1/2.3	2.5 /1.8	3.5/2.6	4.0/3.0
FCEER/Eurovent energy class (1)		55/D			61/D			53/E		
Heating capacity 2 pipe (2)	(kW)	1.4	1.9	2.1	2.0	3.1	3.8	2.9	4.2	4.8
FCCOP/Eurovent energy class 2 pipe (2)		65/E			72/D			62/E		
Heating capacity 4 pipe (2)	(kW)	1.1	1.3	1.5	1.7	2.3	2.7	2.5	3.3	3.6
FCEER/Eurovent energy class 2 pipe (1)		55/D			61/D			53/E		
FCCOP/Eurovent energy class 4 pipe (2)		65/E			72/D			62/E		
Sound power level	(dB(A))	41	49	52	36	48	48	41	52	55
Sound pressure level (3)	(dB(A))	32	40	43	27	39	39	32	43	46
NR level (medium speed)	(dB(A))	34			33			37		
NC level (medium speed)	(dB(A))	33			31			35		
Weights and dimensions										
Length	(mm)	592			592			592		
Width	(mm)	592			592			592		
Height (standard/raised)	(mm)	309/369			309/369			309/369		
Operating weight	(kg)	18			35			45		
Electrical data										
Fan motor absorbed power	(W)	16	22	49	27	44	57	46	52	57
Electric heater capacity	(W)	350/550			700/1150			900/1400		
Electric heater current	(A)	1.5/2.4			3/5			3.9/6.1		
Power supply	(V/Ph/Hz)				230-1-50					

(1) At Eurovent conditions: 7/12°C water 27°/19°C air (50% RH)

(2) At Eurovent conditions: 2-pipe air 20°C, water +50°C inlet; 4-pipe air 20°C, water +70/60°C inlet/outlet

(3) Values calculated from sound power levels with a hypothetical acoustic attenuation of 9 dB

CFAE High Efficiency		16			26			36		
		Low	Medium	High	Low	Medium	High	Low	Medium	High
Airflow	(m³/h)	130	205	295	215	370	540	275	430	620
Total/sensible cooling capacity (1)	(kW)	0.8 / 0.6	1.2 / 0.9	1.6 / 1.2	1.5 / 1.1	2.3 / 1.7	3.2 / 2.4	1.9 / 1.4	2.8 / 2.1	3.8 / 2.8
FCEER/Eurovent energy class (1)		89 / C			152 / B			156 / B		
Heating capacity 2 pipe (2)	(kW)	1	1.5	2	1.7	2.8	3.9	2.2	3.3	4.5
FCCOP/Eurovent energy class 2 pipe (2)		514 / A			536 / A			394 / A		
Heating capacity 4 pipe (2)	(kW)	0.9	1.2	1.5	1.6	2.3	3	2	2.8	3.6
FCCOP/Eurovent energy class 4 pipe (2)		538 / A			1331 / A			975 / A		
Sound power level	(dB(A))	35	46	55	34	46	56	36	48	58
Sound pressure level (3)	(dB(A))	26	37	46	23	36	47	26	39	49
NR Level (medium speed)	(dB(A))	22	32	41	18	30	42	18	33	44
NC Level (medium speed)	(dB(A))	21	30	39	17	28	40	16	31	42
Weights and dimensions										
Length	(mm)	592			970			1192		
Width	(mm)	592			592			592		
Height (standard/raised)	(mm)	309 / 369			309 / 369			309 / 369		
Operating weight	(kg)	18			35			45		
Electrical data										
Fan motor absorbed power	(W)	8	14	29	8	16	37	10	19	42
Electric heater capacity	(W)	350 / 550			700 / 1150			900 / 1400		
Electric heater current	(A)	1.5 / 2.4			3 / 5			3.9 / 6.1		
Power supply	(V/Ph/Hz)				230/1/50					

(1) At Eurovent conditions: 7/12°C water 27°/19°C air (50% RH)

(2) At Eurovent conditions: 2-pipe air 20°C, water +50°C inlet; 4-pipe air 20°C, water +70/60°C inlet/outlet

(3) Values calculated from sound power levels with a hypothetical acoustic attenuation of 9 dB



HFCE/HFXE VFCE/VFXE

Fan coil water terminals



Customer benefits

- Attractive cabinet models or concealed types for wall, ceiling and floor installations
- Silent operation: good acoustic comfort
- Flexibility: customized system to fit your exact requirements
- Easy commissioning: saving of time and money
- Low height, meaning no difficulties in fitting tight ceiling applications

Range description

HFCE: horizontal concealed fan coil

HFXE: horizontal exposed fan coil

VFCE: vertical concealed fan coil

VFXE: vertical exposed fan coil

Main features

- Low noise permanent split capacitor motor with permanently lubricated sealed sleeve bearings
- Metal fan wheel both statically and dynamically balanced
- Threaded connection, match up duct collars and keyholes for hangers shorten installation time
- One unit provides total comfort requirements: both cooling and heating

Options

- Left-hand or right-hand connections
- Heating by hot water coil or electric sheathed element
- Back or bottom return air plenum- adapts to a variety of return air direction
- Nylon or aluminum filters
- Stainless steel drain pan - no seams or joints for maximum security from leaks

Controls

- Control valve package- valve, controller, thermostat and zone sensor to meet individual site requirements

HFCE/HFXE/VFCE/VFXE		03			04			06			08		
		Low	Medium	High	Low	Medium	High	Low	Medium	High	Low	Medium	High
Airflow (at 0 Pa)	(m ³ /h)	300	350	400	443	530	640	620	765	870	810	970	1080
Total/sensible cooling capacity (at 0 Pa) (1)	(kW)	1.9/1.4	2.2/1.6	2.4/1.8	2.9/1.2	3.3/2.5	3.8/2.9	4.1/3.0	4.8/3.5	5.2/3.9	4.6/3.6	5.3/4.2	5.8/4.6
Heating capacity (at 0Pa) (2)	(kW)	4.7	5.4	6.0	7.1	8.1	9.5	9.7	11.4	12.7	12.4	14.3	15.5
Sound power level	(dB(A))	45	42	50	44	47	50	47	51	52	51	54	57
Sound pressure level (3)	(dB(A))	36	39	41	35	38	41	38	42	43	42	45	48
NR level (medium speed)			33			32			36			39	
NC level (medium speed)			31			30			34			37	
Weights and dimensions													
Length	(mm)		680			930			1065			1350	
Width	(mm)		595			595			595			595	
Height	(mm)		265			265			265			265	
Operating weight	(kg)		23			30			33			41	
Electrical data													
Fan motor absorbed power (medium speed)	(A)		30			36			59			72	
Electric heater capacity	(W)		1000			1400			1800			2800	
Electric heater current	(A)		4.3			6.1			7.8			12.2	
Power supply	(V/Ph/Hz)							230-1-50/230-1-60					

(1) At conditions: 7/12°C water 27°/19°C air (50% RH)

(2) At Eurovent conditions: 2-pipe air 20°C, water +50°C inlet

(3) Values calculated from sound power levels with a hypothetical acoustic attenuation of 9 dB

HFCE/HFXE/VFCE/VFXE		10			12			16			20		
		Low	Medium	High	Low	Medium	High	Low	Medium	High	Low	Medium	High
Airflow (at 0 Pa)	(m ³ /h)	950	1120	1260	1150	1380	1560	2770	2960	3100	3100	3300	3480
Total/sensible cooling capacity (at 0 Pa) (1)	(kW)	5.7/4.4	6.5/5.0	7.2/5.5	7.4/5.5	8.5/6.4	9.2/7.0	13.5/10.7	14.0/11.2	14.4/11.6	15.7/12.3	16.3/12.9	16.8/13.3
Heating capacity (at 0Pa) (2)	(kW)	14.6	16.6	18.3	17.8	20.7	22.7	34.7	36.3	37.4	39.7	41.4	43.0
Sound power level	(dB(A))	49	52	56	52	54	58	74	76	77	76	78	79
Sound pressure level (3)	(dB(A))	40	43	47	43	45	49	65	67	68	67	69	70
NR level (medium speed)			37			39			61			63	
NC level (medium speed)			35			37			59			61	
Weights and dimensions													
Length	(mm)		1520			1770			1090			1245	
Width	(mm)		595			595			595			595	
Height	(mm)		265			265			395			395	
Operating weight	(kg)		55			63			57			62	
Electrical data													
Fan motor absorbed power (medium speed)	(W)		85			104			560			655	
Electric heater capacity	(W)		3200			4000			6000/2000			6000/2000	
Electric heater current	(A)		13.9			17.4			26.1/8.7			26.1/8.7	
Power supply	(V/Ph/Hz)							230-1-50/230-1-60					

(1) At conditions: 7/12°C water 27°/19°C air (50% RH)

(2) At Eurovent conditions: 2-pipe air 20°C, water +50°C inlet

(3) Values calculated from sound power levels with a hypothetical acoustic attenuation of 9 dB



HFCF/HFXF/VFCF

Fan coil water terminals



Customer benefits

- Flexibility: customized system to fit the application's exact requirements
- Slim line design, overall thickness 230 mm, more space saved

Range description

HFCF: horizontal concealed fan coil

HFXF: horizontal exposed fan coil

VFCF: vertical concealed fan coil

Main features

- Seamless female thread copper tube and wave hydrophilic aluminum fins W3B to enhance anti-water splash and improve fin's resistance to corrosion
- Well-insulated one-piece molded drain pan
- Drain valve avoids coil freezing in winter
- 3-speed motor, NSK bearings, low-noise high efficient centrifugal fan
- Easy field fan maintenance and replacement
- Coil tested at pressure 2.5 MPa
- Traditional and earthwise application

Options

- Variable Airflow and Accurate Control
- 2-row, 3-row or 4-row units
- Low and medium static pressure
- RS485 interface and built-in networking control board for communication with ICS
- Bottom or rear plenum/filter option

Energy saving options

- DCBL fan motor technology allows for 60% annual energy savings

Medium speed - 4 row coil		02	03	04	05	06	08	10	12	14
Airflow	(m ³ /h)	260	380	490	670	710	1020	1260	1670	1790
Total cooling capacity (1)	(kW)	1.63	2.67	3.3	4.31	4.79	6.16	7.71	9.46	10.81
Sound power level at 12 Pa	(dB(A))	38	34	40	48	44	49.5	48.5	54.5	57
Sound power level at 50 Pa	(dB(A))	49	46	49	51	53	56	55	61	60
Sound pressure level at 12Pa (2)	(dB(A))	27	23	29	37	33	38.5	37.5	43.5	46
Sound pressure level at 50Pa (2)	(dB(A))	38	35	38	40	42	45	44	50	49
Weights and dimensions (standard unit)										
Length	(mm)	648	883	983	1103	1153	1433	1683	1853	1983
Width	(mm)	487	487	487	487	487	487	487	487	487
Height	(mm)	230	230	230	230	230	230	230	230	230
Operating weight	(kg)	15	21	22	24	25	33	38	42	44
Electrical data										
Fan motor absorbed power (at 12 Pa)	(W)	18	20	32	30	59	100	110	140	170
Fan motor absorbed power (at 50 Pa)	(W)	34	39	48	38	70	124	136	173	257
DCBL fan motor absorbed power (at 12 Pa)	(W)	9.2	10.2	18.4	25.2	27	48.8	53.5	84.8	97
DCBL fan motor absorbed power (at 50 Pa)	(W)	25.4	29.4	28	37.5	46	71.2	84.7	118.5	131.4
Electric heater capacity	(kW)	0.5	1	1.4	1.6	1.8	2.8	3.2	3.6	4.6
Electric heater current	(A)	2.3	4.5	6.4	7.3	8.2	12.7	14.5	16.4	20.9
Power supply	(V/Ph/Hz)	220-240/1/50								

(1) Entering flow dry bulb / wet bulb temperature DB/WB 27/19.5 °C; entering/leaving chilled water temperature 7/12°C

(2) Values calculated from sound power levels with a hypothetical acoustic attenuation of 11 dB, measured 1 meter away horizontally and 1 m down from the supply air source.



TRANE®



DX Unitary Systems

Unitary systems combine heating, cooling, and fan sections all in one or a few assemblies and are used in most classes of buildings, from schools to offices to retail, particularly where low initial cost and simplified installation are important. Our commercial unitary systems feature integrated controls engineered to create the best possible comfort environment for your investment.



Voyager™ I

Packaged rooftop



Customer benefits

- Single packaged air/air unit: simple installation
- High performance: lowest energy consumption
- High reliability: low maintenance costs

Range description

- TSD/YSD/WSD: Downflow air discharge and intake
- TSH/YSH/WSH: Horizontal flow air discharge and intake
- TSD/TSH: Cooling-only unit
- YSD/YSH: Cooling-only unit with gas heat
- WSD/WSH: Reversible heat pump unit

Main features

- Eurovent certified performances
- High efficiency in cooling and heating
- Single-side access for easy service
- Pitched/removable drain pan
- Corrosion-resistant cabinet with epoxy-coated condenser coil and hail guard as standard

Options

- Electric heater (TSD/TSH/WSD/WSH)
- Hot water coil with 3-way-valve (TSD/TSH/WSD/WSH)
- Gas burners, compatible with G20, G25 and G31 gas (YSD/YSH)
- Fresh air intake for air quality and/or energy savings (free cooling) through advanced comparative enthalpy economizer
- Fresh air volume controlled by remote potentiometer, CO² sensor or communication interface
- Fire thermostat/smoke detector
- Clogged filter sensor/fan failure switch

Accessories

- Adjustable or non-adjustable roofcurbs
- Electronic (THS03) and programmable (THP03) zone sensor modules
- Quick adaptation curb (replacement market)
- TD5 Service and Diagnostic full color touchscreen display

ReliaTel™ Controls

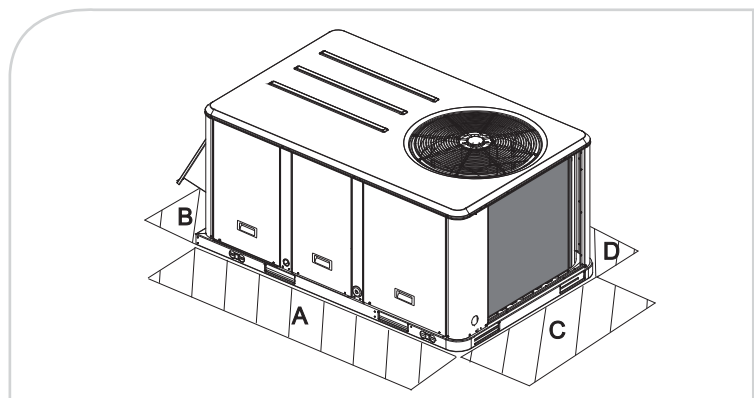
- 24 V easy-to-start and service microprocessor controls
- Built-in conventional thermostat interface
- Remote on/off input
- LonTalk®, Modbus®, BACnet® communication capabilities

This description may not include all options and accessories available. For full technical information, visit engineer.trane.com

TSD/TSH YSD/YSH		060	072	090	102	120
Net cooling capacity (1)	(kW)	17.2	21.8	24.9	28.7	31.7
Total power input (1)	(kW)	5.6	7.18	8.64	9.99	11.84
EER / Eurovent Energy class (1)		3.07 / A	3.04 / A	2.88 / B	2.87 / B	2.68 / C
Outdoor sound power level (3)	(dB(A))	79	81	81	83	79
Indoor sound power level (2)	(dB(A))	71	68	70	78	80
Nominal airflow	(m³/h)	3400	4080	5100	5780	6800
Operating outdoor air temperature range - cooling (min./max.)	(°C)			-18 / 50		
Indoor temperature range - cooling (min./max.)	(°C)			18 / 33		
Indoor temperature range-heating - (min./max.)	(°C)			+5 / +25		
Auxiliary gas heating capacity for gas fired units / Efficiency		24.6kW / 93%	41.3kW / 93%	41.3kW / 93%	51.9kW / 93%	51.9kW / 93%
Auxiliary electric heating capacity	(kW)	12	18	18	25	25
Weights and dimensions (Operating)						
Length	(mm)	1775	2251	2251	2251	2251
Width	(mm)	1124	1353	1353	1353	1353
Height	(mm)	921	1038	1038	1190	1190
Weight (without/with gas burner)	(kg)	240/264	355/383	374/401	415/447	426/459
Clearance A	(mm)			1219		
Clearance B	(mm)			914		
Clearance C	(mm)			914		
Clearance D	(mm)			914		
Electrical data (4)						
Power supply	(V/Ph/Hz)			400/3/50		
Nominal amps	(A)	18	23	26	28	30
Start-up amps	(A)	76	103	120	88	93

WSD/WSH		060	072	090
Net cooling capacity (1)	(kW)	17.2	21.8	24.9
Total power input (1)	(kW)	5.6	7.18	8.64
EER / Eurovent Energy class (1)		3.07 / A	3.04 / A	2.88 / B
Net heating capacity (1)	(kW)	15.3	20.6	25.7
COP / Eurovent Energy class (1)		3.50 / A	3.56 / A	3.83 / A
Outdoor sound power level (3)	(dB(A))	79	81	81
Indoor sound power level (2)	(dB(A))	71	68	70
Nominal airflow	(m³/h)	3400	4080	5100
Operating outdoor air temperature range - cooling (min./max.)	(°C)			-18 / 50
Indoor temperature range - cooling (min./max.)	(°C)			18 / 33
Operating outdoor air temperature range - heating (min./max.)	(°C)			-15 / +20
Indoor temperature range - heating - (min./max.)	(°C)			+10 / +25
Auxiliary electric heating capacity	(kW)	12	18	18
Weights and dimensions (Operating)				
Length	(mm)	1775	2251	2251
Width	(mm)	1124	1353	1353
Height	(mm)	921	1038	1038
Weight	(kg)	256	337	379
Clearance A	(mm)		1219	
Clearance B	(mm)		914	
Clearance C	(mm)		914	
Clearance D	(mm)		914	
Electrical data (4)				
Power supply	(V/Ph/Hz)		400/3/50	
Nominal amps	(A)	18	23	26
Start-up amps	(A)	76	103	120

(1) At Eurovent conditions EN-14511:
indoor: 27°C/19°C, outdoor: 35°C (cooling)
Indoor: 20°C, outdoor 7°C/6°C DB/WB (heating)
(2) Supply + return level
(3) Level in free field
(4) Electrical data given without electric heater and exhaust fan option





Voyager™ II

Packaged rooftop



Customer benefits

- Single packaged air/air unit: simple installation
- High performance: lowest energy consumption
- High reliability: low maintenance costs
- Eurovent certified performances

Range description

- TKD/YKD/WKD/DKD: Downflow air discharge and intake
- TKH/YKH/WKH/DKH: Horizontal flow air discharge and intake
- TKD/TKH: Cooling-only unit
- YKD/YKH: Cooling-only unit with gas heat
- WKD/WKH: Reversible heat pump unit
- DKD/DKH: Reversible heat pump unit with gas heat

Main features

- High efficiency in cooling and heating
- Single-side access for easy service
- Pitched drain pan

Options

- Electric heater (TKD/TKH/WKD/WKH)
- Hot water coil with 3-way-valve (TKD/TKH/WKD/WKH)
- Gas burners, compatible with G20, G25 and G31 gas (YKD/YKH/DKD/DKH)
- Advanced comparative enthalpy economizer
- Fresh air volume controlled by remote potentiometer, CO₂ sensor or communication interface
- Fire thermostat/smoke detector
- Clogged filter/fan failure switch

Accessories

- Adjustable or non-adjustable roofcurbs
- Electronic (THS03) and programmable (THP03) zone sensor modules
- Quick adaptation curb (replacement market)
- TD5 Service and Diagnostic full color touchscreen display

ReliaTel™ Control

- 24 V easy-to-start and service microprocessor controls
- LonTalk®, Modbus®, BACnet® communication capabilities

Energy saving options

- Dedicated downflow/horizontal flow Energy Recovery Module
 - Plate heat exchanger version (efficiency from 40 to 60%)
 - Heat recovery wheel version (efficiency from 65 to 85%)

- Dual fuel (DKD/DKH) unit
 - Switch automatically from mechanical heating to gas heat when efficiency of the heat pump is decreasing in cold ambient temperatures

This description may not include all options and accessories available. For full technical information, visit engineer.trane.com

TKD / TKH	YKD / YKH	155	175	200	250	265*	290*	340*
Net cooling capacity (1)	(kW)	43.5	50.6	55.2	66.4	73.8	85.7	95.2
Total power input (1)	(kW)	14.8	17.3	18.1	22.1	25	28.8	34
EER / Eurovent Energy class (1)		2.93 / B	2.93 / B	3.05 / A	3.01 / A	2.95 / B	2.98 / B	2.8 / B
Outdoor sound power level (3)	(dB(A))	85	86	86	89	87	89	90
Indoor sound power level (2)	(dB(A))	74	77	77	82	83	83	85
Nominal airflow	(m³/h)	8500	9850	11210	14100	14400	16200	18000
Operating outdoor air temperature range - cooling (min./max.)	(°C)	-18 / +50						
Indoor temperature range - cooling (min./max.)	(°C)	18 / 33						
Indoor temperature range - heating (min./max.)	(°C)	+5 / +25						
Auxiliary gas heating capacity for gas fired units / Efficiency		69kW / 90%	69kW / 90%	69kW / 90%	69kW / 90%	-	-	-
Auxiliary electric heating capacity	(kW)	25	25	38	38	38	38	38
Weights and dimensions (Operating)								
Length	(mm)	2726	2726	3107	3107	3107	3987	3987
Width	(mm)	1811	1811	2167	2167	2154	2154	2154
Height	(mm)	1273	1273	1372	1372	1704	1704	1704
Weight (without/with gas burner)	(kg)	590 / 665	623 / 698	747 / 826	772 / 852	869 / -	1140 / -	1148 / -
Clearance A	(mm)	1800						
Clearance B	(mm)	1220						
Clearance C	(mm)	1000						
Clearance D	(mm)	1300						
Electrical data (4)								
Power supply	(V/Ph/Hz)	400/3/50						
Nominal amps	(A)	33	41	44	47	51	59	66
Start-up amps	(A)	107	117	171	172	179	198	241

WKD / WKH DKD / DKH		125	155	200	265	290	340
Net cooling capacity (1)	(kW)	36.9	44.8	62.4	71.6	78.7	88.4
Total power input (1)	(kW)	11.6	15.4	21.8	25.5	28.6	34
EER / Eurovent Energy class (1)		3.17 / A	2.9 / B	2.86 / B	2.81 / B	2.75 / C	2.6 / C
Net heating capacity (1)	(kW)	34.7	45.3	55.9	65.8	75.4	84.2
COP / Eurovent Energy class (1)		3.54 / A	3.47 / A	3.26 / B	3.26 / B	3.35 / B	3.2 / B
Outdoor sound power level (3)	(dB(A))	85	85	89	87	89	90
Indoor sound power level (2)	(dB(A))	79	74	81	83	83	85
Nominal airflow	(m³/h)	8500	9850	11210	14100	14400	16200
Operating outdoor air temperature range - cooling (min./max.)	(°C)	-18 / +50					
Indoor temperature range - cooling (min./max.)	(°C)	18 / 33					
Operating outdoor air temperature range - heating (min./max.)	(°C)	-15 / +20					
Indoor temperature range heating - (min./max.)	(°C)	10 / 25					
Auxiliary gas heating capacity for gas fired units / Efficiency		48.2kW/91%	69.3kW/90%	69.3kW/90%	69.3kW/90%	77.4kW/91%	77.4kW/91%
Auxiliary electric heating capacity	(kW)	25	25	38	38	38	38
Weights and dimensions (Operating)							
Length	(mm)	2726	2726	3107	3107	3987	3987
Width	(mm)	1811	1811	2167	2154	2154	2154
Height	(mm)	1273	1273	1372	1704	1400	1400
Weight (Without / With gas burner)	(kg)	629 / 699	646 / 721	802 / 881	889 / 968	1175 / 1260	1183 / 1268
Clearance A	(mm)	1800					
Clearance B	(mm)	1220					
Clearance C	(mm)	1000					
Clearance D	(mm)	1300					
Electrical data (4)							
Power supply	(V/Ph/Hz)	400/3/50					
Nominal amps	(A)	30	36	47	52	63	70
Start-up amps	(A)	107	121	172	181	202	244

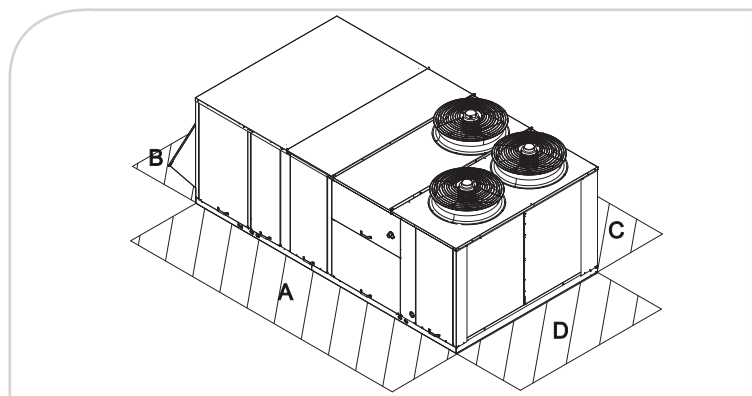
(1) At Eurovent conditions EN-14511: indoor: 27°C/19°C, outdoor: 35°C (cooling), Indoor: 20°C, outdoor 7°C/6°C DB/WB (heating)

(2) Supply + return level

(3) Level in free field

(4) Electrical data given without electric heater and exhaust fan option

* for TKD/H only





Voyager™ III

Packaged rooftop



Customer benefits

- Single packaged air/air unit: simple installation
- High performance: lowest energy consumption
- High reliability: low maintenance costs
- Eurovent certified performances

Range description

- TKD/YKD/WKD/DKD: Downflow air discharge and intake
- TKH/YKH/WKH/DKH: Horizontal flow air discharge and intake
- TKD/TKH: Cooling-only unit
- YKD/YKH: Cooling-only unit with gas heat
- WKD/WKH: Reversible heat pump unit
- DKD/DKH: Reversible heat pump unit with gas heat

Main features

- High efficiency in cooling and heating
- Adjustable pulley and drive kit
- Single-side access for easy service
- Pitched drain pan

Options

- Electric heater (TK*/WK*)
- Hot water coil with 3-way-valve (TK*/WK*)
- Gas burners: Staged Low/High capacity (YK*/DK*) or modulating (YK*)
- Advanced comparative enthalpy economizer
- Fresh air volume controlled by remote potentiometer, CO₂ sensor or communication interface
- Fire thermostat/smoke detector
- Clogged filter sensor/fan failure switch

Accessories

- Adjustable or non-adjustable roofcurbs
- Electronic (THS03) and programmable (THP03) zone sensor modules
- Quick adaptation curb (replacement market)
- TD5 Service and Diagnostic full color touchscreen display

ReliaTel™ Control

- 24 V easy-to-start and service microprocessor controls
- LonTalk®, Modbus®, BACnet® communication capabilities

Energy saving options

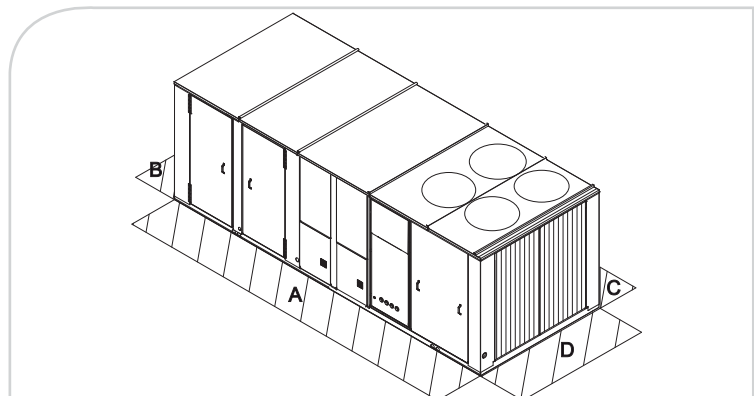
- Dedicated downflow/horizontal flow Energy Recovery Module
- Plate heat exchanger version (efficiency from 40 to 60%)
- Heat recovery wheel version (efficiency from 65 to 85%)
- Dual fuel unit (DKD/DKH)
- Switch automatically from mechanical heating to gas heat when efficiency of the heat pump is decreasing in cold ambient temperatures

This description may not include all options and accessories available. For full technical information, visit engineer.trane.com

TKD / TKH	YKD / YKH	275	300	350	400	500	600
Net cooling capacity (1)	(kW)	81.9	87.0	93.8	93.8	131.0	155.9
Total power input (1)	(kW)	24.3	26.8	29	29	46.8	58.2
EER / Eurovent Energy class (1)		3.37 / A	3.25 / A	3.23 / A	3.23 / A	2.80 / B	2.68 / C
Outdoor sound power level (3)	(dB(A))	91	93	92	93	93	91
Indoor sound power level (2)	(dB(A))	84	84	85	87	87	88
Nominal airflow	(m³/h)	13600	15300	17000	20400	24600	29500
Operating outdoor air temperature range - cooling (min./max.)	(°C)	-18 / +52	-18 / +52	-18 / +52	-18 / +49	-18 / +49	-18 / +52
Indoor temperature range - cooling (min./max.)	(°C)	16 / 33					
Indoor temperature range - heating - (min./max.)	(°C)	18/25					
Auxiliary gas heating capacity/Efficiency - low heat		69.3kW/93%				77.4kW/93%	
Auxiliary gas heating capacity/Efficiency - high heat		117.5kW/93%				154.8kW/93%	
Auxiliary gas heating capacity/Efficiency - mod. heat		46.3kW/105% - 145kW/93.5%					
Auxiliary electric heating capacity	(kW)	25	25	38	38	38	38
Weights and dimensions (Operating)							
Length TK*/YK* low heat/YK* high heat	(mm)	4580 / 4580 / 5285				5200 / 5900 / 5900	
Width	(mm)	2302					
Height	(mm)	1821	1821	1821	1996	1996	2268
Weight (no heat/with gas burner low heat / high heat)	(kg)	1599 / 1642 / 1835	1603 / 1658 / 1845	1650 / 1709 / 1895	2021 / 2135 / 2191	2080 / 2193 / 2250	2241 / 2494 / 2551
Clearance A	(mm)	2440					
Clearance B	(mm)	1220					
Clearance C	(mm)	1220					
Clearance D	(mm)	1830					
Electrical data (4)							
Power supply	(V/Ph/Hz)	400/3/50					
Nominal amps	(A)	76	81	95	115	130	152
Start-up amps	(A)	209	248	261	324	392	414

WKD / WKH DKD / DKH		400	500	600
Net cooling capacity (1)	(kW)	112.3	134.6	154.7
Total power input (1)	(kW)	39.3	50.8	63.1
EER / Eurovent Energy class (1)		2.86 / B	2.65 / C	2.45 / D
Net heating capacity (1)	(kW)	103.4	145.6	172.1
COP / Eurovent Energy class (1)		3.30 / B	3.27 / B	3.28 / B
Outdoor sound power level (3)	(dB(A))	93	90	91
Indoor sound power level (2)	(dB(A))	87	87	88
Nominal airflow	(m³/h)	20400	24600	29500
Operating outdoor air temperature range - cooling (min./max.)	(°C)	-18 / +52		
Indoor temperature range - cooling (min./max.)	(°C)	18 / 33		
Operating outdoor air temperature range - heating (min./max.)	(°C)	-15 / +20		
Indoor temperature range heating - (min./max.)	(°C)	10 / 25		
Auxiliary gas heating capacity / efficiency - low heat		77.4kW / 93%		
Auxiliary gas heating capacity / efficiency - high heat		154.8kW / 93%		
Auxiliary electric heating capacity	(kW)	63	75	75
Weights and dimensions (Operating)				
Length WK* / DK*	(mm)	5200 / 5900		
Width	(mm)	2302		
Height	(mm)	1996	2268	2268
Weight (no heat/with gas burner low heat / high heat)	(kg)	2047 / 2161 / 2217	2282 / 2395 / 2452	2297 / 2550 / 2607
Clearance A	(mm)	2440		
Clearance B	(mm)	1220		
Clearance C	(mm)	1220		
Clearance D	(mm)	1830		
Electrical data (4)				
Power supply	(V/Ph/Hz)	400/3/50		
Nominal amps	(A)	113	145	159
Start-up amps	(A)	288	354	421

- (1) At Eurovent conditions EN-14511:
indoor: 27°C/19°C, outdoor: 35°C (cooling)
Indoor: 20°C, outdoor 7°C/6°C DB/WB (heating)
- (2) Supply + return level
- (3) Level in free field
- (4) Electrical data given without electric heater and exhaust fan option





Tracker™

Light commercial building supervisor



Customer benefits

- Control and monitor up to 12 rooftops units with one Tracker™
- Intuitive, menu-driven user interface

Main features

- 2 wires cable communication with units (LonMark®)
- 365-day scheduling and 10 schedules
- Capability of including all equipment and devices in one schedule
- Temporary schedule override
- Easy-to-administer security system with two levels of access
- Automatic daylight savings time changeover
- Error and alarm messaging
- Setpoint viewing and editing
- Trend data collection
- Report generation
- Optimal start

Features exclusive to the PC software (optional)

- RJ45 - Ethernet connection
- Backup and restore capability
- Standard graphics and HTML graphical interface
- Binary output programming capability
- Operator-defined custom alarms capability
- Printer support

Connection to controllers over shared Ethernet/ IP connection

- E-mail forwarding of alarms and messages
- Standard timed override (after hours) usage report
- Standard daily, monthly, and yearly energy reports

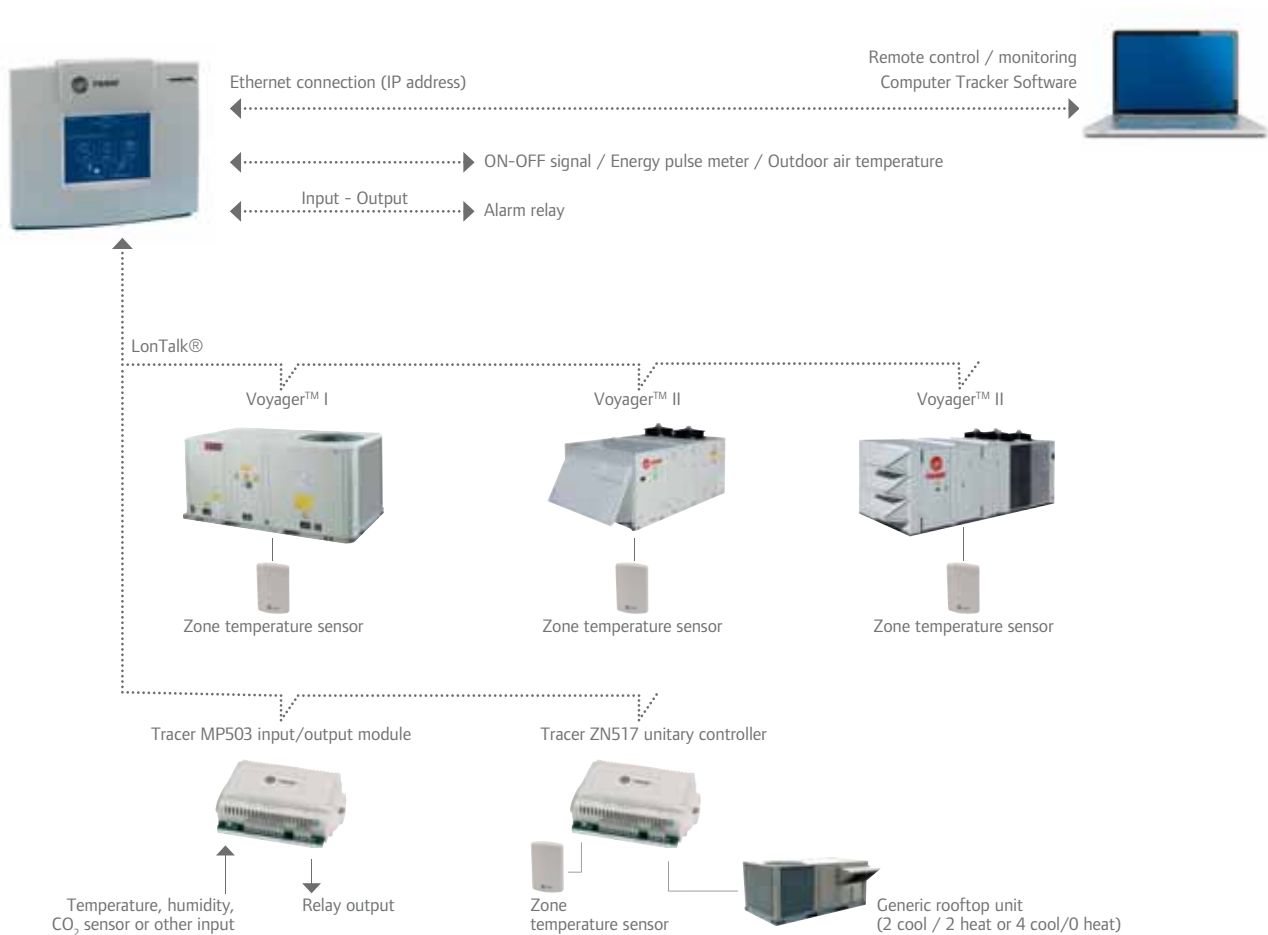
Note: The Tracker PC software is not needed to set up and operate a typical building.

Accessories

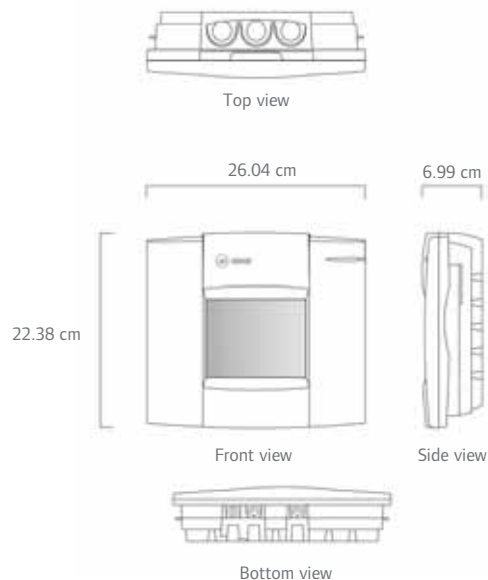
- Room/Duct mounted zone temperature sensor
- ZN517 unitary controller to control non-Trane units: ZN517 provides control for 2 cooling + 2 heating capacity steps or 4 cooling capacity steps, Supply Fan, Exhaust fan, economizer ON-OFF
- MP503 input/output module for customized control MP503 Module accepts electrical signals from a variety of sensors and controls the state of binary relays outputs. The Tracer MP503 provides four universal inputs and four binary outputs.

This description may not include all options and accessories available. For full technical information, visit engineer.trane.com

Typical architecture



Dimensions





RAUL

Condensing unit



Customer benefits

- Flexibility: customized system to fit the application's exact requirements

Main features

- Scroll compressors –hermetic, high efficiency, low vibration, low sound
- Full internal overheating protections
- Access panels are quickly removable using a square key
- Disconnect switch and transformer
- Discharge and liquid line service valves
- Evaporator temperature sensor
- External sheet metal parts are galvanized and finished with powder paint RAL 9002

Options

- Low ambient operation (down to -18°C)
- 380, 400 and 415V power voltage
- Black epoxy-coated aluminium fins
- Copper fins
- Compressor sound attenuating jackets
- High and low pressure gauges
- Auxiliary card to validate auxiliary temperature setpoint with a remote contact
- Phase reversal protection

- Factory-mounted LonTalk® serial link allowing you to:

- Modify temperature setpoint
- Start or stop the unit
- Monitor air temperature setpoint, ambient air temperature, condensing unit operation, fans, compressors alarms

Trane Tracer™ CH530 Control

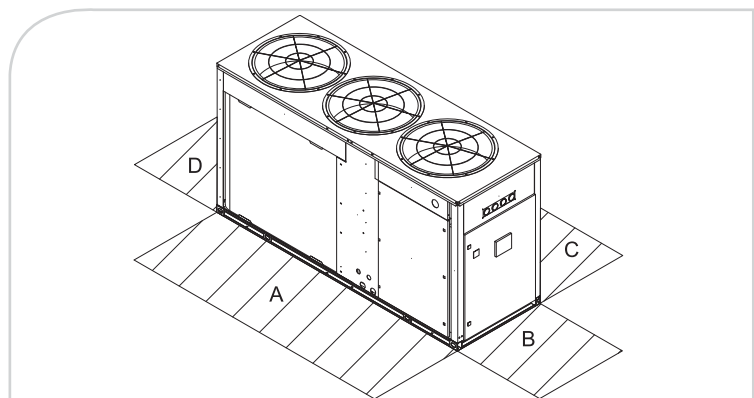
Adaptive Control™ microprocessor featuring:

- Easy-to-use operator interface panel
- External Auto/Stop
- Remote contact to start and stop each compressor
- Cooling and current-limit remote setpoint card (optional)
- LonTalk® communication card (optional)
- Programmable fault card 4 relays (optional)

This description may not include all options and accessories available. For full technical information, visit engineer.trane.com

RAUL		190	260	300	350	400	450	500	600	700	800
Net cooling capacity R407C (1)	(kW)	54.8	66.6	81.1	95.3	108.3	118.8	133.0	162.0	194.7	218.8
Total power input R407C (1)	(kW)	18.2	25.1	29.8	33.4	38.4	45.6	51.7	61.0	71.3	83.9
Net cooling capacity R134a (1)	(kW)	43.8	53.2	63.9	75.4	85.1	93.6	106.3	127.9	153.8	172.7
Total power input R134a (1)	(kW)	12.1	15.8	18.5	21.3	24.3	27.7	31.5	37.0	47.1	53.9
Number of refrigerant circuits		1	1	1	2	2	2	2	2	2	2
Number of compressors/capacity steps		2	2	2	3	3	3	4	4	6	6
Sound power level	(dB(A))	86	87	89	89	90	90	90	92	98	98
Sound pressure level at 10m	(dB(A))	54	55	57	57	58	58	58	60	66	66
Suction line diameter	(inches)	1"5/8	1"5/8	1"5/8	1"5/8	1"5/8	1"5/8	1"5/8	1"5/8	2"1/8	2"1/8
Liquid line diameter	(inches)	7/8"	7/8"	7/8"	7/8"	7/8"	7/8"	7/8"	7/8"	1"1/8	1"1/8
Weights and dimensions (Operating)											
Length	(mm)	2061	2061	2061	2921	2921	2921	2225	2225	3090	3090
Width	(mm)	995	995	995	995	995	995	1865	1865	1948	1948
Height	(mm)	1582	1582	1582	1582	1582	1582	1584	1584	1598	1598
Weight	(kg)	514	584	650	810	900	926	1040	1168	1575	1634
Clearance A	(mm)	800	800	800	800	800	800	800	800	1000	1000
Clearance B	(mm)	800	800	800	800	800	800	900	900	1000	1000
Clearance C	(mm)	800	800	800	800	800	800	800	800	1000	1000
Clearance D	(mm)	900	900	900	900	900	900	800	800	1300	1300
Electrical data											
Power supply	(V/Ph/Hz)	400/3/50									
Nominal amps R407C (2)	(A)	41	50	59	70	79	88	99	117	150	168
Start-up amps R407C	(A)	144	199	207	219	228	236	248	265	299	316
Nominal amps R134a (2)	(A)	31	38	45	53	60	67	75	89	116	130
Start-up amps R134a	(A)	139	194	201	209	216	223	231	245	272	286

(1) At 7°C saturated suction temperature and 35°C ambient temperature
(2) At 5°C saturated suction temperature and 60°C saturated discharge temperature





RAUJ

Condensing unit



Customer benefits

- Flexibility: customized system to fit the application exact requirements

Main features

- Phase loss/reversal/low voltage monitor
- Factory-installed discharge and liquid line service valves
- Passive manifolding for 3-D scroll compressors
- Standard ambient operating range 4°C to 52°C (46°C max. ambient for evaporator)
- Heavy gauge galvanized steel frame
- Louvered panels for coil protection
- Slate gray air-dry paint finish (exceeds 672 hour salt spray test in accordance with ASTM B117)

Options

- Remote chiller evaporator with field installation kit
- Non-fused disconnect (C20 to C60 models)
- Low ambient option
- Hot gas bypass to the evaporator inlet
- Suction service valve
- Pressure gauges
- Return air sensor
- Copper finned condenser coil
- Unit spring isolators
- Neoprene-in-shear isolators

- Not CE compliant
- UL approval on 60 Hz version
- Extended Compressor Warranty
- Special coil coating for corrosion resistance
- Constant volume, VAV, and no controls options on C20 to C60 models, VAV and no controls options on C80 to D12 models

Control

In addition to the “no system control” option, Trane offers three system control options on C20 to C60 units and two system control options on the C80 to D12 units, each using solid-state electronics.

These options allow the unit to be ordered with the controls needed, saving field installation costs.

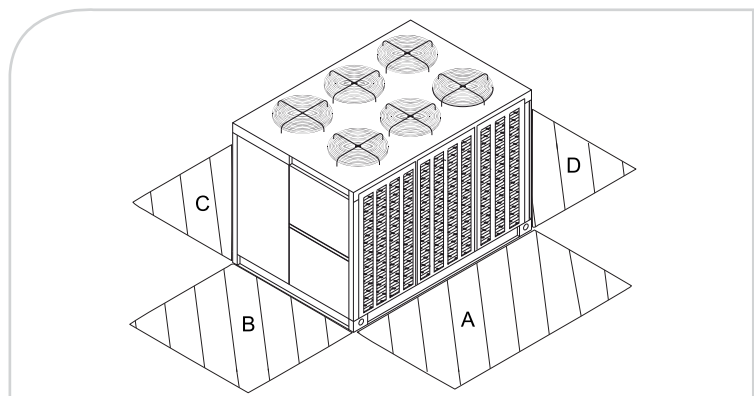
Coil Frost Protection: Trane offers Froststat™ with the VAV system control option Froststat™ is the industry’s most reliable method of coil frost protection and assures that your system will provide energy efficient comfort at part load conditions.

This description may not include all options and accessories available. For full technical information, visit engineer.trane.com

RAUJ		C20	C25	C30	C40	C50	C60	C80	D10	D12
Net cooling capacity R410A (1)	(kW)	77.5	94.2	115.3	156.4	194.3	222.9	316.1	385.8	466.9
Total power input R410A (1)	(kW)	22.6	26.9	35.0	46.1	59.5	67.3	103.6	119.6	142.0
Number of refrigerant circuits	(kW)	1	1	1	2	2	2	2	2	2
Number of compressors / capacity steps	(kW)	2	2	2	4	4	4	6	6	6
Suction line diameter	(inches)	1"5/8	1"5/8	1"5/8	1"5/8	1"5/8	1"5/8	2"5/8	2"5/8	2"5/8
Liquid line diameter	(inches)	7/8"	7/8"	7/8"	7/8"	7/8"	7/8"	1"1/8	1"1/8	1"1/8
Weights and dimensions (Operating)										
Length	(mm)	2242	2242	2242	2242	2891	2891	4477	5772	5772
Width	(mm)	1527	1527	1527	2242	2242	2242	2242	2242	2242
Height	(mm)	1886	1886	1886	2013	2013	2013	2013	2013	2013
Weight	(kg)	732	754	761	1194	1316	1345	2291	2622	2798
Clearance A	(mm)	1829	1829	1829	1829	1829	1829	2438	2438	2438
Clearance B	(mm)	1067	1067	1067	1067	1067	1067	1219	1219	1219
Clearance C	(mm)	1829	1829	1829	1829	1829	1829	2438	2438	2438
Clearance D	(mm)	1067	1067	1067	1067	1067	1067	1219	1219	1219
Electrical data (2)										
Minimum circuit ampacity at 200/3/60	(A)	102	119	141	193	236	267	411	480	574
Minimum circuit ampacity at 230/3/60	(A)	89	107	123	168	215	232	358	425	515
Minimum circuit ampacity at 460/3/60	(A)	46	52	63	87	102	120	174	207	255
Minimum circuit ampacity at 575/3/60	(A)	39	44	57	73	86	107	139	166	204
Minimum circuit ampacity at 400/3/50	(A)	46	52	63	86	101	119	173	206	253

(1) Performances given at 35°C outdoor ambient and 7°C saturated suction temperature

(2) Minimum circuit ampacity (MCA) is 125 percent of the RLA (Rated Load Amp) of one compressor motor plus the total RLA of the remaining motors.





Jupiter

Close control unit



Customer benefits

- Compact design: space savings in plant rooms
- Accuracy: accurate temperature and humidity control for any size of application
- High performance: lowest energy consumption. EC fan motor (option)

Range description

Unit with AC motor and forward curved fan

JDCC: Chilled water downflow

JUCC: Chilled water upflow

JDAC: Air-cooled direct expansion downflow

JUAC: Air-cooled direct expansion upflow

JDWC: Water-cooled direct expansion downflow

JUWC: Water-cooled direct expansion upflow

Unit with EC motor and backward curved fan

JDCV: Chilled water downflow

JUCV: Chilled water upflow

JDAV: Air-cooled direct expansion downflow

JUAV: Air-cooled direct expansion upflow

JDWV: Water-cooled direct expansion downflow

JUWV: Water-cooled direct expansion upflow

Main features

- Designed for environments in which high-tech equipment is the predominant heat source and comfort applications (offices...)
- Front access for total unit maintenance
- Double inlet galvanized steel centrifugal fans with forward curved blades

Options

- Electric reheat/hot water reheat
- High pressure centrifugal fans
- Electrode boiler humidifier
- High efficiency filters
- Fresh air module with filter
- Air suction from the front, rear or base (upflow configuration only)

Accessories

- Dirty filter alarm (differential pressure switch)
- Temperature and humidity sensor
- Base frames and plenums (intake or discharge) for easier integration
- External sensors for high ambient temperature and humidity alarm signals
- Fire and/or smoke detector
- Water leak detector with one sensor
- Excess pressure damper

Control

mP40 microprocessor control module with easy-to-use LCD graphic display

- Temperature and humidity control and recording system
- Complete alarm signaling and recording system
- Automatic restart
- Remote auto off function
- On-site language selection
- Connectivity with the most common communication protocols (BACnet®/LonTalk®/Modbus®/...) or local RS485 network

This description may not include all options and accessories available. For full technical information, visit engineer.trane.com

Chilled water units

JDCC / JDCV / JUCC / JUCV		0020	0025	0030	0040	0060
Net cooling capacity (total/sensible) (1)	(kW)	7.2 / 6.6	9.9 / 8.9	10.9 / 10.0	13.7 / 13.0	22.3 / 20.5
Supply airflow	(m³/h)	1610	2280	2305	3265	5035
Maximum external static pressure	(Pa)	191	59	37	144	82
Sound pressure level at 2m (downflow version)	(dB(A))	49	50	50		
Weights and dimensions (Operating)						
Length	(mm)	550	850	850	850	1200
Width	(mm)	450	450	450	450	450
Height	(mm)	1740	1740	1740	1740	1740
Weight	(kg)	105	135	135	145	220
Electrical data						
Power supply	(V/Ph/Hz)	200/1/50 - 400/3/50				

Direct expansion air-cooled units

JDAC / JDAV / JUAC / JUAU		0115	0125	0133	0135	0150	0160
Net cooling capacity (total/sensible) (2)	(kW)	6.2 / 5.8	7.6 / 6.3	10.1 / 10.1	12.7 / 11.4	16.8 / 15.5	18.1 / 16.1
Total power input (indoor+outdoor unit)	(kW)	2.4	3.0	3.7	4.7	5.7	6.3

Direct expansion water-cooled units

JDWC / JDWV / JUWC / JUWV		0115	0125	0133	0135	0150	0160
Net cooling capacity (total/sensible) (3)	(kW)	6.4 / 5.8	8.2 / 6.5	10.4 / 10.4	13 / 11.5	17.4 / 15.6	18.4 / 16.1
Total power input	(kW)	2.4	3.0	3.7	4.7	5.7	6.3

General data - Direct expansion units

Number of refrigerant circuits		1	1	1	1	1	1
Number of compressors / capacity steps		1	1	1	1	1	1
Supply airflow	(m³/h)	1645	1731	3205	3440	4500	5202
Maximum external static pressure	(Pa)	193	155	178	123	153	40
Weights and dimensions - Direct expansion units							
Length	(mm)	550	850	850	850	1200	1200
Width	(mm)	450	450	450	450	450	450
Height	(mm)	1740	1740	1740	1740	1740	1740
Weight	(kg)	105	135	135	145	220	220
Electrical data - Direct expansion units							
Power supply	(V/Ph/Hz)	200/1/50		-	-	-	-
Power supply	(V/Ph/Hz)	400/3/50					

(1) Based on 24°C/50% relative humidity (return air), intake water temperature: 7°C, outlet water temperature: 12°C, glycol: 0%

(2) Based on 24°C/50% relative humidity (return air), outdoor air temperature: 35°C

(3) Based on 24°C/50% relative humidity (return air), intake water temperature: 30°C, leaving water temperature 35°C, glycol: 30%



Mercury

Close control unit



Customer benefits

- Flexibility: customized system to fit the application's exact requirements
- Accuracy: accurate temperature and humidity control for demanding applications
- Sound level: one of the best acoustic comfort levels available in the market place

Range description

Unit with AC motor and backward curved fan

EDCB: Chilled water downflow

EUCB: Chilled water upflow

EDAB: Air-cooled direct expansion downflow

EUAB: Air-cooled direct expansion upflow

EDWB: Water-cooled direct expansion downflow

EUWB: Water-cooled direct expansion upflow

Unit with EC motor and backward curved fan

EDCV: Chilled water downflow

EUCV: Chilled water upflow

EDAV: Air-cooled direct expansion downflow

EUAV: Air-cooled direct expansion upflow

EDWV: Water-cooled direct expansion downflow

EUWV: Water-cooled direct expansion upflow

Main features

- Designed for environments in which high-tech equipment is the predominant heat source
- Front access for total unit maintenance
- High pressure centrifugal plenum fans with backward curved blades

Options

- Electric reheat/enhanced electric reheat

- Hot water/hot gas reheat
- Variable speed EC fans motor
- Electrode boiler humidifier
- Air filters
- Fresh air module
- Air suction from the front, rear or base (upflow configuration only)
- Front discharge floor stand
- Different acoustic linings for the panels of the unit casing
- Electronic expansion valve

Accessories

- Condensate drain pump
- Humidifier condensate drain pump
- External sensors for high ambient temperature and humidity alarm signals
- Fire and/or smoke detector
- Water leak detector
- Base frames and plenums (intake or discharge) for easier integration

Control

A mP40 microprocessor control module with easy-to-use LCD graphic display

- Temperature and humidity control
- Complete alarm signaling and recording system
- Automatic restart
- Remote auto off function
- On-site language selection
- Connectivity with the most common communication protocols (BACnet®/LonTalk®/Modbus®/...) or local RS485 network

This description may not include all options and accessories available. For full technical information, visit engineer.trane.com

Chilled water units

EDCB / EDCV / EUCB / EUCV		0070	0100	0120	0170	0200	0250	0270 (4)	0340 (4)	0400 (4)
Cooling capacity (Total / Sensible) (1)	(kW)	27 / 25.4	33.9 / 33.2	43.6 / 41.4	57.2 / 55.1	69.3 / 67	87.6 / 81.5	97.9 / 88.7	111 / 103	126 / 114
Supply airflow (m³/h)	(m³/h)	6060	10200	10420	14920	18680	18680	18725	24777	25193
Weights & Dimensions (Operating)										
Length (always biggest dimension on floor)	(mm)	1010	1010	1310	1721	2172	2172	2172	2582	2582
Width	(mm)	750	866	866	866	866	866	866	866	866
Height	(mm)	1960	1960	1960	1960	1960	1960	1960	1960	1960
Weight (kg)	(kg)	220	306	314	395	443	458	502	702	740
Electrical Data										
Power supply	(V/Hz/Ph)	400/3/50								

(1) Based on 24°C/50% relative humidity (return air), intake water temperature: 7°C, outlet water temperature: 12°C, glycol: 0%

Direct expansion air-cooled units

EDAB / EDAV / EUAB / EUAV		1105	1106	2107	2207	2109	2209	2111	2211	2113	2213	2216	2218	2222	4222	2225	4225	4228
Cooling capacity (total/sensible) (2)	(kW)	20.9 / 19.8	23.3 / 21	25.8 / 25.8	25.8 / 25.8	34.6 / 30.3	34.6 / 30.3	40.6 / 39	40.6 / 39	45.9 / 42.8	45.9 / 42.8	62.3 / 55.2	66.9 / 57	80.7 / 80.7	81.7 / 81.7	92.6 / 87.6	91.2 / 87.6	95.9 / 91

Direct expansion water-cooled units

EDWB / EDWV / EUWB / EUWV		1106		2109		2113		2216		2218		4222		4225		4228		
Cooling capacity (total/sensible) (3)	(kW)	-	23.2 / 19.2	-	-	34.1 / 30	-	-	-	-	46 / 43.3	60 / 53	66.1 / 54.5	-	90 / 89.2	-	99.3 / 88.8	102.6 / 93.9

General data - Direct expansion air-cooled and water-cooled units

Number of refrigerant circuits		1	1	1	2	1	2	1	2	1	2	2	2	2	2	2	2	2
Number of compressors / capacity steps		1	1	2	2	2	2	2	2	2	2	2	2	2	4	2	4	4
Supply airflow	(m³/h)	5750	5750	8530	8530	8530	8530	12895	12895	12895	12895	16590	16590	21635	21635	22835	22835	23210
Weights & Dimensions (Operating)																		
Length (always biggest dimension on floor)	(mm)	1010	1010	1310	1310	1310	1310	1721	1721	1721	1721	2172	2172	2582	2582	2582	2582	2582
Width	(mm)	750	750	866	866	866	866	866	866	866	866	866	866	866	866	866	866	866
Height	(mm)	1960	1960	1960	1960	1960	1960	1960	1960	1960	1960	1960	1960	2175	2175	2175	2175	2175
Weight	(kg)	280	310	430	447	430	447	548	559	575	585	714	714	910	910	918	930	1040
Electrical Data - Direct expansion units																		
Power supply	(V/Hz/Ph)	400/3/50																

(1) Based on 24°C/50% relative humidity (return air), intake water temperature: 7°C, outlet water temperature: 12°C, glycol: 0%

(2) Based on 24°C/50% relative humidity (return air), outdoor air temperature: 35°C

(3) Based on 24°C/50% relative humidity (return air), intake water temperature: 30°C, Leaving water temperature 35°C, glycol: 30%

(4) Size 0270-0340-0400-0430 only available in Downflow version: EDCB/EDCV

(5) Size 2222, 4222, 2225, 4225 and 4228 only available in Downflow version: EDAB/EDAV/EDWB/EDWV



Notes

Handwriting practice lines consisting of 25 horizontal dotted lines.



TRANE®



Controls

With a comprehensive understanding of your strategy and requirements, we can recommend and implement solutions to achieve your goals and reduce your HVAC system lifecycle costs.

Trane controls



Trane's controls product portfolio offers a full range of devices that have been developed within Trane and Ingersoll Rand engineering and Centers of Excellence around the world.

Trane HVAC controls products were developed by (and for) HVAC systems specialists. This unique approach takes into account the system design requirements for both the HVAC application and the HVAC equipment. In this way, consideration is given both to the individual controlled equipment AND also to the functionality of the Building Management System (BMS), as well as to the SYSTEM overall performance. The field controllers are pre-programmed, pre-tested and factory-mounted on our HVAC equipment. This ensures a highly reliable and efficient equipment, while the commissioning process is reduced to its simplest tasks, thus saving valuable time and resources on site, while ensuring high performance and reliability of the controls.

Trane field controllers have advanced equipment HVAC embedded application libraries which have been developed over 100 years of experience. This provides our equipment with the best life cycle and the best efficiencies. All Trane HVAC applications are designed to improve the commissioning and maintenance processes and also to reduce overall operating cost.

Having the best performing HVAC equipment controls is not enough to make sure the system delivers the best efficiency.

At the process level, Trane has in depth technical knowledge on complex HVAC system applications such as chilled water variable primary flow, ice storage, free cooling, variable air systems, etc. Each process focuses on different customer requirements such as space comfort, chilled water supply temperature/flow accuracy, indoor air quality, energy efficiency.

Trane supports you by selecting, designing and processing the best solutions for your HVAC system. Our building and HVAC controls solutions include pre-engineered applications, such as chiller plant control, variable air system control, automatic ventilation and IAQ control. On top of their total focus on HVAC expertise, Trane BMS solutions, offer full flexibility by natively supporting the latest IT technologies, such as IP networking, as well as web services support.



Smart Solutions for Smart Buildings

Building Controls

Building automation systems do not have to be complex to be effective. Typically a building automation system that is complex to use seldom achieves the energy and operational efficiencies as the capabilities of the systems are not fully utilized.

Trane's Building Management System (BMS) only requires limited settings with predefined functions such as time-of-day schedule, automatic setpoint reset, zone management or alarms menu.

Buildings often require rearrangement of their internal space. Trane's highly flexible system is simple to reconfigure and customize in order to match the evolving needs of the occupants.

Control at your fingertips

Trane's BMS uses the latest web technologies to enable access via a web browser on any device connected to the customer network or smart devices using the Trane app.

Energy savings

Energy efficiency is maximized without compromising system performance by employing pre-engineered HVAC strategies such as occupancy, ambient, indoor air quality and free cooling.

Trane's BMS can optimize and control ancillary equipment and systems such as lighting, energy metering and sunlight shading.

Project management

Trane can take responsibility for the delivery of the complete BMS to meet the project requirements.

Trane personnel are experts in the efficient design, installation and commissioning of the entire HVAC system and can also provide ongoing maintenance services.



Smart Solutions for Smart Buildings

Equipment Controls

Chiller controllers

Tracer™ UC800 Controller

The latest generation of Trane centrifugal and screw chillers use advanced algorithms to keep them running under the most challenging conditions, when other chillers would simply shut down.

Tracer™ Color Touchscreen Display

The Tracer UC800 features a large (7" or 12") touchscreen full-color interface for simple, intuitive operation.

General purpose equipment unit controllers

- Tracer™ variable-air-volume controllers
- Tracer™ terminal unit controllers
- Tracer™ programmable controllers
- Tracer™ interfaces for chillers and rooftops

Field-installed controllers

Tracer™ UC400 / UC600 Programmable Unit Controllers

Programmable BACnet unit controllers are designed to work with the Tracer™ SC and third-party BACnet MS/TP systems with high I/O capabilities. A standard library of applications is available to ensure trouble-free operation, whatever the requirements are.

Tracer™ SC

System Controller

Seamless facility management is a reality with this flexible, cost-effective solution. Any PC, tablet or connected device can provide access for programming.

Tracer SC eliminates the need for a dedicated computer and monitor. System performance can be managed whenever and wherever it is convenient. "Point-and-click" technology provides simple scheduling, reporting and applications programming.

The intuitive online tools increase occupant comfort, increase efficiency and reduce energy costs, adding up to happier personnel and a better bottom line.

Tracer ES™

Building Management Software

Tracer ES provides a web-based solution for managing single or multiple buildings from one interface.

- System visibility from any location allows total management of system status, alarms and schedules
- Reports enable enterprise-wide decision making for optimized performance
- BACnet® IP permits easy integration with other systems

Mobile App

Gain new freedom while maintaining a higher level of control. The Tracer™ BAS Operator Suite enables the operation of building control systems using a tablet or smart phone to:

- Monitor equipment
- Control spaces
- Make setpoint changes
- Manage alarms

The Tracer BAS Operator Suite works with iOS™ and Android™ devices.

Chiller Plant Controls

Take control of your chiller plant



Rising energy costs and operational conditions drive companies to seek greater returns from investments, in other words, get more with less. Additional pressures such as environmental and safety regulations force companies to remain vigilant in managing capital, human resources and infrastructure.

Performance Targets

Ever-increasing targets demand that facilities operate more efficiently, more effectively and for longer hours. The resultant pressure on the chiller plant may lead to increased operating costs or reduced performance.

Budget Allocations

Companies working with reduced budgets find it increasingly difficult to approve funding for capital investment projects. In the drive to reduce costs, system maintenance may be cut.

Regulations

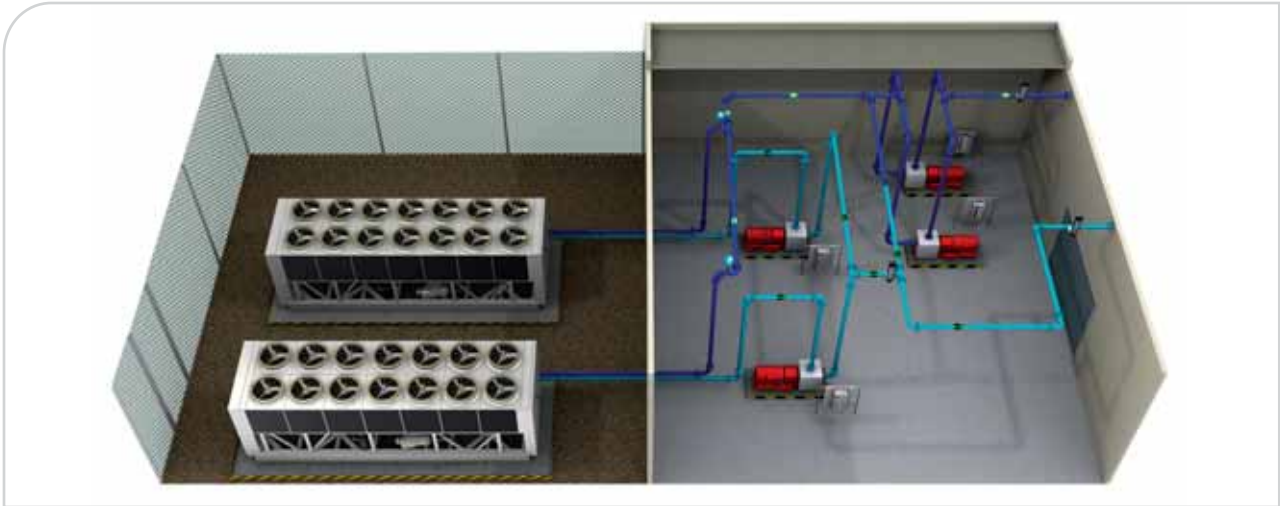
Environmental initiatives demand sustainable operation. In many sectors such as food or pharmaceuticals, further traceability is a regulatory requirement.

Operating Costs

Running a cooling system is one of the most significant costs on any operating budget. It is extremely challenging to keep this expenditure flat, year on year, when the cost of energy is rising relentlessly.

According to the European Commission's Joint Research Centre (EC JRC), heating, ventilation and air-conditioning systems constitute 11% of electrical energy consumption in the 27 EU member states. Chiller plants can consume over 7% of typical building energy consumption.

Advancing from control to optimization



With appropriate controls, optimal performance of the chiller plant can be achieved, resulting in increased system efficiency and reduced lifecycle costs. Trane's unparalleled knowledge of commercial cooling systems has produced the following range of advanced control solutions:

EcoSet

Most chillers produce the same water temperature throughout the year regardless of seasonal changes in cooling load. Trane's solution optimizes chiller performance by tracking these changes and adjusting the chilled water setpoint to improve chiller efficiency.

OptiPlant

Where installations use two air-cooled chillers, they often operate at much less than full load, and in some cases at only 50%. Trane OptiPlant will match the number of chillers in operation to the cooling requirements at any given time to substantially reduce run times.

Chiller Plant Manager

Trane Chiller Plant Manager ensures that only the required plant components operate at their most efficient point to minimize run times. Trane's advanced supervisory system will reduce operating costs by balancing component run times and will notify users when scheduled maintenance is required.

Chiller Plant Optimizer

Trane's most advanced controls solution takes a holistic view of the plant, optimizing operation of the complete system. The Chiller Plant Optimizer provides a comprehensive dashboard view enabling control at your fingertips and prompt action to address operational deviations.



Chiller Plant Controls

EcoSet

This control solution consists in raising the setpoint temperature when the building operates at less than design load conditions. Producing chilled water at a higher temperature lowers the burden on the compressor, which

reduces the energy consumption. Up to four chillers can be controlled with this solution. It is ideally suited to deliver comfort in office buildings where dehumidification is not a requirement.

Features	Function
Chilled Water Reset	Matches plant operation with prevailing conditions, reducing annual energy consumption by 3 to 10%.
Chiller Scheduling (optional)	Initiates chiller operation at a specific time of day to amplify energy savings and reduce compressor wear.

OptiPlant

Trane OptiPlant is the customized control solution for comfort cooling installations with two air-cooled chillers in small buildings and commercial spaces. Based on the chilled water demand, it will limit chiller operation and its

associated auxiliary equipment thus reducing operating costs. A touchscreen display allows you to monitor and control key operating parameters.
Energy monitoring version available.

Features	Function
Chiller Scheduling	Initiates chiller operation at a specific time of the day to amplify energy savings and reduce compressor wear.
Demand Limiting	Allows user to run no more than one chiller, independent of the load, when current draw needs to be limited.
Soft Start	Prevents excess capacity from being brought online at start up.
Chiller Rotation	Equalizes chiller operating time.



Chiller Plant Controls

Chiller Plant Manager

Trane Chiller Plant Manager is an advanced control solution recommended for chiller plant applications with multiple chillers. System components must work in harmony to

maximize comfort, compliance and performance. In addition to controlling the chillers, the Chiller Plant Manager also controls and sequences all components of the chiller plant.

Features	Function
Low Ambient Lock-out	Prevents the plant from operating below a preset external ambient temperature.
Failure Recovery Management	Automatically starts the next chiller in the sequence if one in operation fails.
Advanced System Control	Ensures only the required components are operating to meet a system load.
Programmed Maintenance	Advises when maintenance is due, based on elapsed time or run time.
Remote Operation	Provides browser and application support for both tablets and mobile phones.
Remote Alarming	Generates customizable alarms and delivers notification via email.
Data Trending	Displays key trends graphically for rapid interpretation and generates trend logs.

Chiller Plant Optimizer

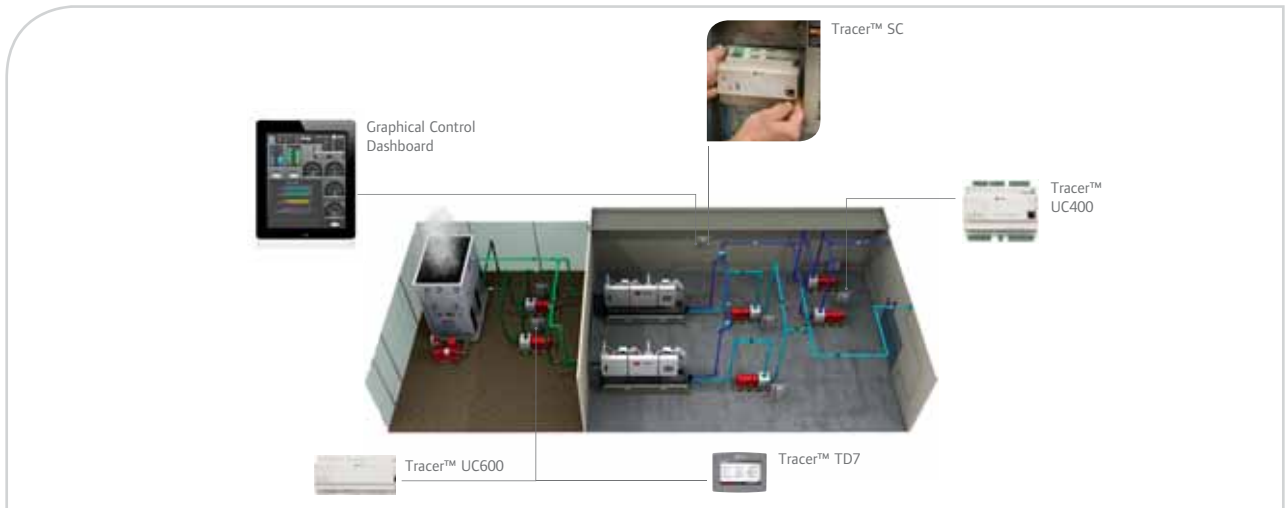
Trane Chiller Plant Optimizer is a fully scalable and adaptable control solution that can optimize the performance of the chiller plant. This control solution

provides additional management data with customizable management dashboards.

Features	Function
Chiller/Cooling Tower Optimization	Calculates the optimal condenser water temperature to minimize energy usage.
Pump Pressure Optimization	Calculates the minimum pressure the pumps must deliver to satisfy the most demanding load.
Special Applications	Capable of controlling advanced functions including free cooling, heat recovery or thermal storage.
Scalability	The optimizer is fully scalable to meet the demands of the most complex installation.
Dashboard	Monitors system performance.

Chiller Plant Controls

Architecture



Trane chiller plant controls architecture is built around core high technology components. Our control technologies are scalable for water-cooled or air-cooled chiller plant infrastructures.

programming and managing chiller plants that can extend to any HVAC equipment. Accessible from any PC, tablet or connected device, Tracer SC eliminates the need for a dedicated computer and monitor, so you can manage system performance whenever, wherever it is convenient.

Tracer™ UC600 Programmable Controller

A programmable BACnet unit controller designed to work with the Tracer SC and third-party BACnet MS/TP systems. The UC600 has the I/O and size to meet the controls needs for multiple pump arrangements, cooling towers, dry coolers and central plants.

Tracer™ UC400 Programmable Controller

Tracer UC400 is an ideal solution when special sequences are required. Standard software applications come preloaded at the factory, simplifying field installation.

Tracer™ SC System Controller

Allows you to streamline facility management without reinventing the entire system. Adding Tracer SC to your system provides a flexible, cost effective solution for

Tracer™ TD7 Color Touchscreen Display

A 7 inch diagonal color touchscreen designed for both indoor and outdoor use. This visually intuitive solution makes it quicker and easier than ever to access the reliable control offered by the Tracer UC600.

Built on BACnet®

Tracer controls are built on the open BACnet® data communication protocol. Install Trane Tracer controls today, and you're ready for the future integration of additional building automation devices, from both Trane and other suppliers.



Chiller Plant Controls

Capability overview

		EcoSet	OptiPlant (*)	Manager	Optimizer
	FEATURES				
Interface	Local operator display	X	X	O	O
	Graphical operator interface			X	X
	Chiller plant dashboard			O	X
	Energy dashboard		O	O	O
Data	System temperatures	X	X	X	X
	System data			X	X
	Plant performance data				X
Location	Local panel	X	X	O	O
	Facility			X	X
	Remote access			O	X
	BENEFITS				
Component	Chiller run time reduction	O	X	X	X
	Chiller efficiency increase	X	X	X	X
	Ancillary run time reduction	O		X	X
System	System efficiency increase		O	X	X
	Failure management		X	X	X
	Real-time management			X	X

X = Two air cooled chillers
O = Option



Notes

Handwriting practice lines consisting of 25 horizontal dotted lines.



TRANE



Building Services

Trane building services provide a wide range of offerings that enable you to benefit from the highest levels of performance from the systems in your facility. Whether you're installing new equipment, maintaining an existing system or completely upgrading your infrastructure, Trane building services provide exactly the expertise you need.



Elite Start™ services

Solutions for proper and optimized operation

Customer benefits

Trane's startup services are key to ensuring your new product purchases are installed correctly and operating at maximum performance during the first year. Trane's factory authorized technicians have access to the latest training and service tools to optimize ensure HVAC design performance and optimal operation.

Main features

- Startup - following prescribed engineering checklists to ensure all equipment functions meet operational parameters in a reliable and efficient manner.
- Operation - from startup, ensures new Trane products will operate within designed parameters.
- Performance - assures customers that new Trane products will operate at peak reliability and efficiency during first year of service. These services are available for all Trane products.



Trane Extended Start

Foundation for high performance buildings

Customer benefits

Assure first-year system performance

Make sure your HVAC system gets off to the right start with Trane Extended Start. It's the best way to validate proper installation and assure the highest level of performance during that all-important first year of operation.

Trane Extended Start goes above and beyond the warranty and includes five essential services and three optional services which will create a system baseline to build a strong high performance building foundation.

1. Validate Installation and Startup

Most HVAC failures that occur early in the system's life are during the first year of operation.

2. Monitor Critical Parameters and Adjust System Settings

Monitoring first-year operation and critical parameters is crucial during the initial break-in months. This assures your investment is properly integrated into your environment, and is providing peak performance and efficient energy use.

Main features

The baseline for high performance buildings: twelve months of value-added services

Trane Extended Start – 5 plus 3

5 Essential Services

- Post-installation inspection
to validate that installation and start-up were done to factory specifications.

- Benchmark report
an analysis of the current operating characteristics of your equipment. It will be an “as-installed” benchmark to track changes in performance in later years.
- Health check inspection
to measure critical parameters, adjust unit control settings and correct any operational deviations.
- Chiller oil analysis
to analyze samples, indicate any deviation and recommend corrective actions.
- Filter changes
as per Trane recommendations to maximize flow and system efficiency.

3 Optional Services

- Vibration analysis
to establish a benchmark reference to later identify a range of future faults such as shaft misalignment, bearing defects, or motor electrical problems.
- Get connected
to remotely monitor critical alarms, provide periodic communications link verification and produce automatic critical alarm activity reports.
- Operator training
your operators receive on-site training on best operation and maintenance procedures to ensure safe, reliable and efficient operation of your system.



HVAC parts and supplies

Having the right part for your needs is only part of the story

From precision Trane original to generic parts, Trane offers a comprehensive parts inventory to answer customers' needs. This means finding the right part for you, regardless of who makes it. Whether you are looking for compressors, controls, electrical supplies, HVAC accessories, chemicals, or tools and tests equipment, we can give you a competitive edge.

State-of-the-art logistics

We have the infrastructure to find, deliver and even install the required part anywhere in the world with a minimum of downtime. Trane is committed to giving you the best value backed with the most advanced logistics infrastructure and a highly efficient distribution network.

- Main Parts Center in Genk, Belgium with 5000 references and a total of 250000 parts.
- Three additional major Parts Distribution Centers in Turkey, the United Arab Emirates and India.
- Logistic platforms in Trane factories.
- Local parts centers to ensure all your parts needs are fulfilled.

Easy to do business with

- Simple to contact a Trane service expert.
- A reliable and loyal partner.
- Consistent level of service throughout Europe, the Middle East and Africa.
- A single-source supplier for Trane original and generic parts, simplifying purchasing processes and invoicing.

Expertise

- With over 90 years of experience, Trane stands out in the industry as a reference in terms of innovation, high quality and efficient service.
- Highly qualified Trane professionals provide the right solution for your specific needs, no matter what your system, budget, or brand requirements might be.

Fast and efficient

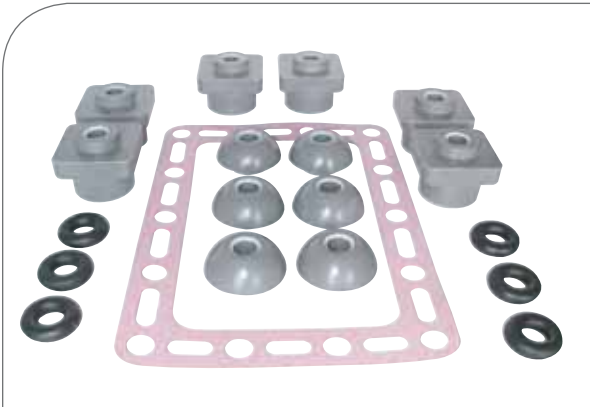
- Easy access to parts information and quick quotations.
- On-line inventory management system offers realtime visibility of inventory levels to all Trane sales offices.
- Strategically located near international carrier hubs, Genk Parts Center enables late order processing with guaranteed next day delivery.
- Online tracking system provides reliable shipment status.

Competitive pricing

- On Trane and generic parts.
- On shipping costs thanks to strategically located parts centers and our extended distribution network.

Customer proximity

With 130 locations in Europe, the Middle East and Africa, Trane has one the most extended service networks always offering expert advice on the right parts, at the right place and at the right time.



Trane HVAC Kit Solutions

To better answer your needs, we have developed a greater range of professional kits for common maintenance and repairs. These kits will offer you greater peace of mind with the guarantee that you have all the parts required for a specific service intervention.

Trane HVAC kits offering

- Compressors
 - Mounting isolator kit
 - Gasket and 'o'ring kit
 - Revision kits
 - Repair kit
 - Oil line kit
 - Terminal board retrofit kit
 - Gasket kit for GP2 compressor motor change
- Trane controls
 - Wire harness adapter female kit
- Oil and refrigerant filters
 - RTAC Refrigerant filters kit
- Consumables
 - Acidity kit
 - Oil analysis kit
- CCU unit
 - Humidifier drip tray kit
 - Cylinder filter kit
- Fan coil unit
 - Electrical heater kits
 - Condensate pump kit
 - Lift pump kit
 - Housing and fan kit
- HVAC accessories
 - Ignitor burner gas kit
 - Burner fan kit
 - Retrofit centrifugal pump kit
 - Connector female kit
 - Fan motor kit
 - Motor, fan, guard kit
 - Plenum and grid kit
 - Motor assembly, grid, capacitor kit
- Rooftop unit
 - Fire thermostat kit
 - Siphon kit
 - Clogged filter detector kit
 - Electrical coil V1 kit
 - Speed variator kit
 - Fault relay kit



SureFit™ coils

A Trane Parts Solution

Customer benefits

Trane is committed to being your single-source solution for replacement coils—for any HVAC equipment, from any manufacturer. Our system offers rapid quotes.

With a wide service network and over 1,000 of the best trained engineers and service technicians in the industry, Trane is always prepared to rush the delivery of your Trane SureFit™ coils.

Coils for any type of application or brand

Trane SureFit™ coils are available for the majority of applications and designs:

- Refrigerant, water, steam
- Material types: aluminium, copper, stainless steel, epoxy coated
- Chillers, air handling units, dry cooler, ...
- Numbers of circuits

Even if the original coil is not a Trane design we can provide any type of coil regardless of the brand.

Trane SureFit™ replacement coils will restore reliability and efficiency to original specifications as well as reducing operating cost.

In certain cases, it is possible to exceed original specifications.



Chiller Health Check Program

Customer benefits

Reliable, efficient performance and lower operational costs are directly linked to how your Trane chiller is maintained. The Trane Chiller Health Check Program is a step-by-step evaluation of the current performance status of your equipment. With the right information in hand, your Trane service expert will analyze the current status and provide you with a detailed report and suggestions for chiller performance enhancement.

Main features

Trane offers either a basic or comprehensive program. Both programs include an oil sample analysis in a laboratory to evaluate the presence of wear on the components and compare the current oil parameters to original specifications

The comprehensive program includes the eddy current and vibration analyses to verify the internal condition of the heat exchanger tube and the compressor respectively. The additional thermographic inspection provides immediate status of the electrical panel.

Any signs of deterioration will be noted during the different inspections. Your Trane expert will be able to suggest the best solution to fix any issues and quickly restore your Trane chiller to optimal operating conditions.



Trane Select™ Agreements

Comprehensive service contracts
for HVAC systems



24hrs/day, 7 days/week



Maintenance



Parts coverage



Lifecycle management

Customer benefits

Best cost of ownership

- Planned maintenance ensures your HVAC system runs at top efficiency, providing up to 12% energy savings.
- Your equipment will receive regular inspection, preventive maintenance and proper calibration. Any potential problem will be corrected before anyone in your building becomes aware of it.
- In choosing your level of coverage, you know exactly what services and parts are covered.
- There are no surprises when it comes to expenses.

Total peace of mind

- Trane looks out for your needs.

Main features

With our extended service plans, Trane is your ideal service solutions provider to protect your HVAC installation investment. Trane Select Contracts are tailored to fit your HVAC system needs and business requirements. They offer four different levels of coverage - from preventive maintenance plans to comprehensive maintenance.



Trane controls services

Comprehensive service contracts for building controls systems

Customer benefits

Regular controls servicing results in continuous comfort for the occupants, and the lowest possible operating and maintenance costs. By regularly monitoring and adjusting your existing controls system Trane will also enable you to operate without emergency failures.

Trane has the expertise to optimize the safety, comfort, and efficiency of all the mechanical and electronic components of your HVAC system.

We can help you manage your building systems to ensure their optimum operation. With a Trane Controls Service plan, each passing minute generates energy savings and improves your cost of ownership.

Main features

Your building is a complex, inter-related set of systems. Over time lots of small changes can cause major shifts in comfort, efficiency and safety levels. Trane maintenance for building controls systems is your strategy to keep everything optimized.

Our trained specialists can advise you on what impact any change may have. They can also monitor your system and identify clues, such as a 1°C deviation as being caused by a 10% leakage elsewhere in the system. Most importantly, our engineers will treat your building controls system as an integrated whole and when changes are necessary they will take appropriate programming actions to ensure there are no negative effects elsewhere in the system.

Customer's needs	Services	Equipment	Controllers	Applications	User Interfaces
Optimized systems giving safety, comfort and efficiency: - Commercial offices - District cooling - Education - Health care - Life sciences - Lodging - Industry - Institutional - Retail	- Cost of ownership - Maintenance - Upgrade - Replacement - Parts - Audit - Training	- Chilled water terminals - Variable air volume - Air handling units - Rooftops - Water chillers - Cooling towers - Dry coolers - Variable frequency drives	- ZN 523/ZN 525 - CH 530 - EX2 - MP 501/503 - PIC - MP 581 - BMTX	- Intelligent room control - Chiller plant control - Boiler plant control - Free cooling and heat recovery - Variable air volume systems	- BMS workstation - Web server - Touchscreen display - Wall sensor



Trane Building Advantage

Customer benefits

Your building and its HVAC system represent one of your organization's most significant capital investments. On the operating side, 40 to 60% of your total energy budget goes into running that chiller plant. Our mission with Trane Building Advantage is clear: to bring you the services, tools, equipment and expertise to transform your building in terms of cost, performance and positive environmental impact.

Our customers measure HVAC systems by their reliability, efficiency and environmental impact. The suite of enhancement solutions we call Trane Building Advantage has been developed to deliver results at both the individual component level and the plant level.

Main features

Trane Building Advantage will transform your HVAC system into strategic business advantages:

Reliability

- Analyse your existing system and provide detailed diagnoses and recommendations
- Develop a proactive maintenance plan
- Reduce the risk of breakdowns
- Extend equipment life

Efficiency

- Identify and unlock energy savings within your system
- Upgrade equipment and meet ROI targets
- Enhance existing equipment through maintenance and retrofit

Environment

- Manage the use of scarce energy resources
- Minimize carbon footprint
- Meet regulatory requirements
- Optimize the quality of the working environment





Each of our three strategies - Analyze - Optimize - Modernize - is supported by a range of solutions.

Analyze:

extract key data from your system and use it to make informed decisions.

Oil analysis, Thermography, Tube testing, Vibration analysis, Chiller plant analysis, Metering, Refrigerant leak testing, Refrigerant monitor

Optimize:

achieve optimum operation of your existing equipment.

Compressor R'newal, Exchanger enhancement, Adiabatic cooling, Automatic tube cleaning, Exchanger cleaning, Power factor correction, Noise reduction, Refrigerant management

Modernize:

use targeted interventions with the latest technology to update part or all of your system.

Adaptive Frequency Drive, Chiller control retrofit, Chiller plant manager, Chiller upgrade, FreeCool, OptiPlant, Partial heat recovery, Refrigerant retrofit





Chemical analysis

The Trane Chemical Laboratory has developed the specialized expertise to analyze various types of fluids found in your HVAC installation.

Having regular analyses done by experienced service engineers helps reduce maintenance costs and guarantee equipment efficiency and reliability. Problems can be found and fixed before they become major.

- Fast delivery of results
- Graphs of the current test data with past test data for easy comparison
- Past and present interpretations and service recommendations

Compressor oil analysis

- All compressor makes and types (scroll, reciprocating, helical-rotary and centrifugal)
- Helps extend the life of the existing charge and maintain compressor efficiency
- Allows compressor repairs to be scheduled to reduce downtime
- Identify problems without tearing down the compressor
- Reduce problems of used oil disposal
- Lower refrigerant emissions
- Standard testing includes: ferrous index, non-ferrous index, particle count, spectrometry, wear level evolution chart, contamination index, total presence of moisture, contamination level evolution chart, chemical index, dielectric test, viscosity at 40°C, viscosity index, chemistry level evolution chart, TAN (total acid number) test.

Refrigerant analysis

- Detects contamination levels. When contaminant levels fall outside acceptable ranges, corrective actions are recommended.
- All types of refrigerants
- Helps extend the life of the existing charge

Lithium bromide analysis

- Detects substance imbalance
- Corrective actions are recommended if necessary
- Helps extend the life of the existing charge



Vibration analysis

Customer benefits

Every piece of HVAC equipment with rotating components has its own vibration signature.

Any change in this signature can be used as an accurate means of identifying developing problems such as bearing wear, shaft imbalancing, and degrading helical-rotary compressor rotor tolerance.

The monitoring and diagnostics system will reliably detect not only potential defects at the initial stage of their development but also identify the exact defect type and its severity. Vibration analysis can identify problems long before they become noticeable.

Main features

The vibration measurement and analysis techniques used by Trane can identify a wide range of developing faults such as shaft misalignment, bearing defects, imbalance, or motor electrical problems.

Sensitive sensors are installed in carefully selected places. The smallest deviation or any abnormal behavior is detected and recorded. The vibration spectrum of your equipment illustrates its internal condition. These graphs are simply and clearly explained to you. To help you further, we will provide you recommendations in terms of maintenance scheduling.

If the vibration analysis report indicates, for instance, an imminent compressor fault, then we will advise you how to plan for a scheduled compressor renewal.



Compressor R'Newal™

Customer benefits

Equipment breakdown can have disastrous consequences. In human terms, it can mean discomfort to building tenants, leading to dissatisfaction and complaints. In financial terms, it can mean extensive repair or replacement costs. But with Trane R'newal™, all this can be avoided.

The Trane R'newal™ program is a comprehensive service solution designed to restore your chiller's compressor performance and reliability to like-new levels.

Main features

The R'newal™ service restores your compressor to like-new specifications and operating condition:

- Thorough cleansing
- Clearance measurements
- Mechanical parts are ground and polished where necessary to restore optimal operation.
- Motor: thorough electrical tests, revarnishing or new replacement motor fitted.
- Original quality parts replacement: bearings, gaskets, non-return valve, capacity control valve, lip seal, motor terminals, impellers.
- Remounting
- Packing: compressor is painted and packed for shipping to your site.



Eddy current tube analysis

Customer benefits

- Improved equipment operation and reliability
- Extended equipment life
- Reduced operating costs
- Reduced risk of costly breakdowns
- Reduced downtime.

Main features

The condition of the tubes in a shell and tubes heat exchanger has a direct impact on the efficiency of your chiller. Depending on its size, a heat exchanger contains hundreds or thousands tubes, all undergoing mechanical stress and chemical corrosion. Tubes are therefore critical to chiller performance, and yet standard maintenance techniques can check most everything except these tubes.

Equipped with the latest technological tools, Trane can detect, locate and record internal and external corrosion, deposits, wear or cracking before their consequences start to damage your installation.

This analysis results in a detailed report containing all the recordings, photographs of defective zones, and most importantly, recommendations as to the technical and practical actions required to resolve the situation.



Thermography

Trane Thermography is a non-invasive, safe and proven predictive service that detects potential risks in electrical and mechanical equipment. Plus, because your plant can remain up and running, you'll have a clearer picture of where potential breakdowns are hiding, before it's too late.

Customer benefits

Prevent unscheduled downtime

Trane Thermography is perfect for electrical inspections – as well as mechanical inspections. For example, as electrical connections become loose, there is resistance to current that can cause an increase in temperature, which means energy is wasted generating heat. As a result, components can fail, causing unplanned outages and even injuries. Through Trane Thermography, however, potential hazards the human eye can't see become crystal clear.

Main features

A snapshot of equipment components

Differences in temperature are key elements in monitoring equipment. As thermography captures an object's heat signature, it creates a two-dimensional color image of the equipment components. That image will then be used to compare a good component to a problematic one and detect any potential risks. Thermal imagers can also store heat signatures for comparison and upload images to a database.

Picture perfect analysis

When it comes to predictive maintenance, thermography has become a preferred choice among building owners, managers and operating engineers. It's easy to understand why. With no downtime or interruptions required, instant imaging and picture perfect analysis, Trane Thermography is the ideal way to help keep your plant running safely and reliably.



Automatic tube cleaning

Customer benefits

Automatic tube cleaning is the key to keeping heat exchangers operating at peak efficiency.

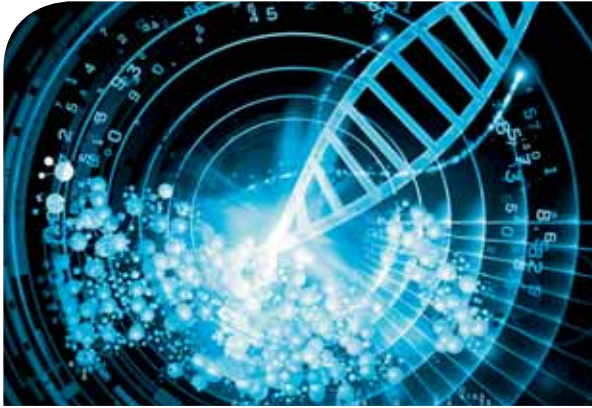
- Improved operating efficiency: the chiller continuously operates at optimum efficiency, leading to lower energy use and consequent cost reduction.
- Extended chiller life cycle: increasing return on investment, because the compressor never operates beyond its design limits and because condenser tube corrosion is eliminated.
- No chiller downtime: the automatic tube cleaning system keeps the condenser tubes permanently clean while the chiller is operating.
- Low cleaning system operating costs: the sponge balls used in the automatic tube cleaning system are the only consumables needing to be replaced.
- Lower water treatment costs: water treatment is only required to prevent scaling of ancillary equipment, leading to cost savings of as much as 50% of the cost of chemicals used for water treatment.
- Environment friendly: the automatic tube cleaning system uses no chemicals.

Main features

The Trane automatic tube cleaning system is a unique hydro-mechanical cleaning system that operates continuously to keep heat exchanger surfaces completely free from fouling.

The Trane automatic tube cleaning system features specially developed sponge balls, which are injected into the chiller condensing water flow to provide continuous tube cleaning while the chiller is in operation.

It is delivered fully pre-programmed, with settings that can, where necessary, be simply and quickly changed to cater for varying water qualities.



Adaptive Frequency Drive

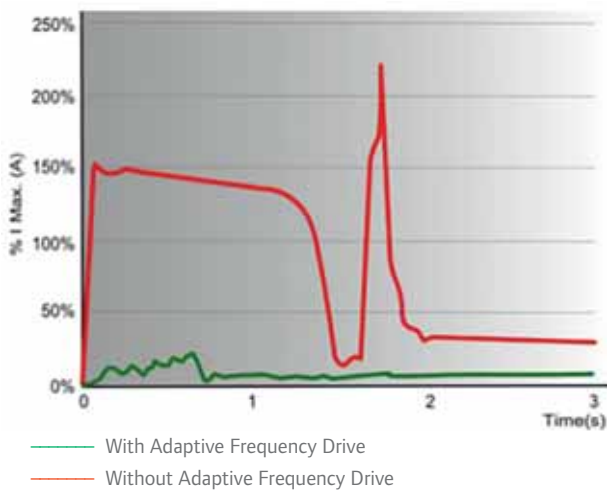
Customer benefits

- Reduce utility costs: up to 35% energy savings
- Trust electrical devices: low inrush current
- Constant power factor correction to 0.95
- Low harmonic distortion
- Advanced control: touchscreen color display and data trending

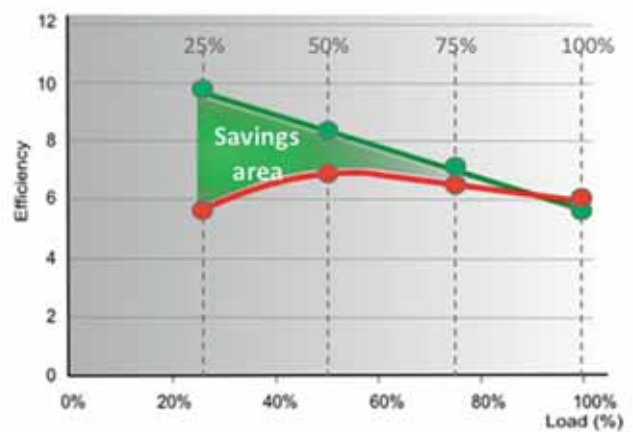
Main features

Every RTHD chiller has a potential to have a second youth thank to Adaptive Frequency Drive retrofit. The unit will be modified with Trane Adaptive Frequency Drive and New Tracer control.

Reduced inrush current



Higher efficiency





Heat recovery

Customer benefits

- Recover up to 70% of the compressor electricity input
- Reduced use of gas to heat water
- Easy to implement with guidelines and Trane support

Main features

Improve your HVAC system efficiency by implementing heat recovery to your existing chiller. Trane heat recovery has no impact on chiller performances and will help reduce energy consumption to generate heat.

Trane heat recovery solution is available for Trane Air

Cooled chiller:

- RTAC
- RTAD
- RTAA
- CGAM

Trane heat recovery solutions apply perfectly to

- Industrial application where cooling is required for your process and heating is required for warehouse.
- Hotel: producing sanitary water and cooling building at the same time.



AdaptiView™ upgrade

Customer benefits

If you are a building owner who has an older Trane CenTraVac™ chiller, this is the right solution for you. The Trane Tracer AdaptiView™ control panel upgrade allows you to update your chillers to the same controls offered on new Trane CenTraVac™ chillers.

Tracer AdaptiView™ helps operators keep the chiller plant running at its most efficient level. All this is made possible by a graphical user interface that provides deeper understanding, along with quicker response times.

- Improves operator productivity
- Guarantees continuous operation utilizing industry best adaptive control algorithms
- Optimizes chiller operation
- Offers easier integration in Building Automation Systems thanks to open protocol flexibility

Main features



- 1 Large, full-color touchscreen for fingertip control of chiller subsystems
- 2 Instant access to operational data for faster issue analysis and resolution
- 3 At-a-glance status updates readily display key operating parameters
- 4 Easy-to-read trending charts and diagnostic reports help fine tune chiller control
- 5 Industry-leading algorithms optimize control during rapidly changing conditions

Specifications

- Adjustable arm and tilt screen for better viewing
- Opened protocols: BACnet, MSTP Lontalk, Comm4, Modbus Slave
- Optional cover UV IP56 available for outdoor usage



Adiabatic cooling

Customer benefits

Adiabatic cooling reduces the temperature of the air entering the coil, facilitating improvement of equipment reliability and efficiency.

- Reduction of system power input
- Delivery of design capacity without interruptions
- Extension of equipment operating range beyond its original specifications.
- Permits R404 refrigerant retrofit
- Increase in reliability thanks to reduction in compressor discharge temperature, so compressor components are less stressed and operate in better conditions.
- Coil stays cleaner longer because the mesh placed in front of it acts as a self-cleaning filter.

Main features

The Trane Adiabatic Cooling concept is based on the natural thermodynamic properties of water.

Water is sprayed intermittently onto large non-metallic mesh panels installed in front of the heat reduction coils of chillers, remote condensers, rooftops, etc.

The evaporating water creates the cooling effect, lowering the air temperature before it reaches the condenser coil.

The system is designed for versatility, simple installation and economical operation.



Trane Acoustic solutions

Customer benefits

Noise disturbance can be source of conflict. Make sure the facility occupants and neighborhood are evolving in a high quality environment.

Trane solutions can reduce sound level of up to 6 dB(A) corresponding to noise emission reduced by 75%.

Main features

Trane offers a wide array of sound level reduction solutions:

- **Compressor sound enclosure:** Trane designed and manufacture compressor enclosure specific to its compressor. So you can make sure noise are contained within the enclosure.
- **Fan speed reduction:** Sound level can be reduced by 4 dB(A).
- **Night time settings:** Adapt your fan speed to your actual building needs.
- **Compressor discharge muffler:** Purpose designed silencers can be fitted at the compressor discharge.





Refrigerant retrofit

Customer benefits

Trane refrigerant retrofit is the key to upgrading HCFC 22 equipment and maintaining optimum performance and efficiency.

A retrofit ensures that your system complies with international ozone regulations.

Trane can advise on the best way to maintain optimum performance and efficiency.

Main features

Options for HCFC 22 replacement include:

- Retrofit to an HFC refrigerant. This can be an attractive option, depending on equipment type, age and working conditions. Only Trane has the necessary computer based selection tools to do the retrofit properly and ensure the results.
- Keep operating your HCFC equipment after 2015. Trane can advise you on refrigerant containment strategies.
- Replace your HCFC equipment before 2015 with equipment using non ozone-depleting HFCs.

Trane Engineered Retrofit

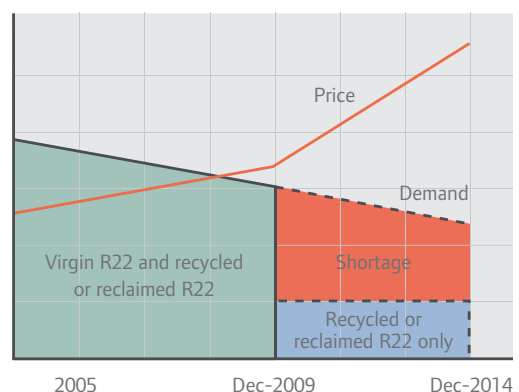
A Trane engineered retrofit, factory tested and qualified, optimizes your chiller to meet your current operation needs. Performed on site it will restore your chiller to its original state, allowing your system to run at peak performance with ozone friendly refrigerants (R134a, R404A, R407C).

Trane Soft Retrofit

A soft retrofit can act as a bridge to either an engineered retrofit or equipment replacement if fast action is needed due to breakdown or refrigerant loss. In such cases, Trane can provide an economical solution using an alternative refrigerant. The soft retrofit depends greatly on the type of chiller and heat exchangers, running conditions, levels of expected performance and climatic conditions.

HCFC 22 production stopped at the end of 2009. Recycled or reclaimed refrigerant is available but not sufficient, consequently a shortage of HCFC 22 is inevitable and can lead to both unplanned downtime and aggressive price rises. The limited availability will also increase the risk that certain companies might be "polluted" or illegally imported virgin HCFC 22. It is, of course, illegal to use such refrigerants and doing so can put your business at risk.

HCFC 22 Availability versus Price (EU only)





Refrigerant management

Customer benefits

- Early awareness ensures earlier corrective actions
- Proactive measurement 24 hours a day, 365 days a year
- Reduction of your building and system impact on the environment and human health
- Improvement of your equipment operation.

Leakages impact reliability and energy efficiency

- Risk reduction of costly breakdowns
- Extension of your equipment lifetime.

Optimal refrigerant charge reduces component stress

- Compliance with (EU) F-Gas regulation and/ or ozone regulation workplace codes (health and safety), and other national regulations.

Main features

Standard monitor

- Technology: Semi-conductor
- Integrated visible and sound alarm
- Multi-refrigerant control
- Sensitivity: 10ppm
- Analog connectivity: Free relays
- Can be connected to a Trane Building Management System

Premium monitor

- Technology: Photo-acoustic Infrared
- LCD display
- Multi-refrigerant control
- Sensitivity: 1ppm
- Digital connectivity: Free relays, 4-20 mA analog output or serial communication (RS 232)
- Can be connected to a Trane Building Management System

Leak testing

Trane offers a tailored leak testing procedure to identify where a refrigerant leak occurs. This procedure is an integral part of any Trane maintenance contract but can also be ordered as a separate service solution.



FreeCool

Customer benefits

Implementing energy efficient solutions such as free cooling requires design expertise and significant investments in time and money. Prepackaged solutions address these challenges while optimizing cost and payback.

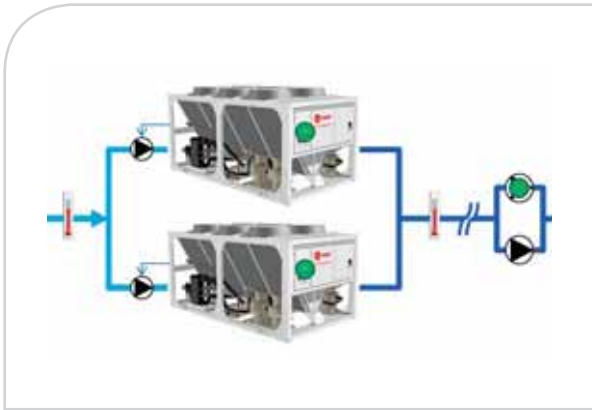
- Reduce electricity peak demand in winter
- Save up to 25% of chiller plant energy consumption
- Design and built in-house
- Plug and Play installation
- Limited hydraulic modifications to minimize chiller plant disruption
- Preprogrammed control reduce commissioning time

Main features

Trane FreeCool comprises all the components required to operate a free cooling system. It is a factory built, configured and tested package.

- Advanced control logic to maximize energy savings
- Preprogrammed controls with configurable parameters
- Trane TD7 available in multiple languages
- System scheduling
- System alarm notification
- Energy metering and performance trending
- Electrical protection devices
- IP55 and freeze protection for outside installation





OptiPlant

Customer benefits

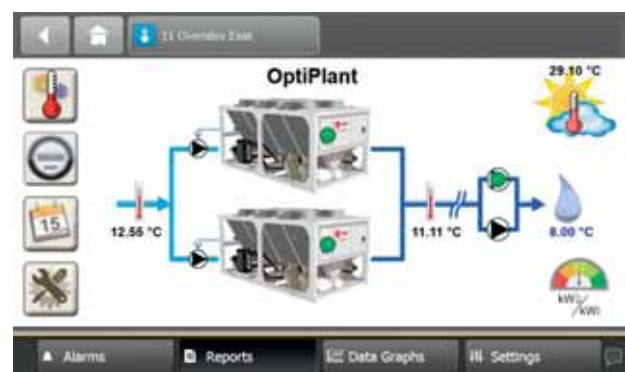
- Lower operating and maintenance costs:
 - Reduced operating hours delivers 15% or more reduction in energy consumption and correspondingly reduced operating costs.
 - Fewer run hours means longer component lifetime and lower maintenance costs.
- Easy chiller control: intuitive screens allow easy monitoring and control of the plant.
- Traceability of plant operation: displays event log and system temperature trends over the seven previous days.
- Rapid return on investment: payback achievable in less than two years in an average size office building.

Main features

Trane's unparalleled knowledge of commercial cooling systems combined with control expertise has produced OptiPlant, a prepackaged control solution. OptiPlant can be installed, commissioned and operated by a non-control technician. A visually intuitive display makes it quicker and easier to commission the solution and to access its control capabilities.

Optional metering

- Measure energy consumption of each chiller
- Display shows daily, weekly and yearly power consumption
- Measure efficiency level





Trane Rental Services

Temporary cooling solutions

Customer benefits

Trane Rental Services can provide fast, safe and cost-effective solutions using modern and reliable equipment.

Fast

Because speed of unit installation can be extremely important to your business, all Trane rental equipment has been fitted with enhancements that save installation time.

Safe and reliable

Whilst getting your system up and running is of utmost importance to your operation, safety and reliability of the equipment provided are equally important. You can depend on Trane modern equipment.

Cost-effective

Whatever the application, Trane can provide a cost-effective temporary cooling solution for your organization until you are able to repair or replace your existing equipment.

Main features

A temporary cooling system will keep your business operational whilst you repair, replace or upgrade your existing system.

Our team of account managers, engineers, service technicians and logistics professionals can rapidly transform the equipment you need into a smoothly functioning system that will exceed your expectations.



Notes

Handwriting practice lines consisting of 30 horizontal dotted lines.



















Notes

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Pictogram Key



	<i>Cooling-only</i>
	<i>Heat pump (or reversible cooling/heating)</i>
	<i>Heat recovery</i>
	<i>Free cooling</i>
	<i>Cooling-only and electric heater</i>
	<i>Cooling-only and gas burner</i>
	<i>Reversible heat pump with gas burner for auxiliary heat</i>
	<i>Multi-pipe unit</i>
	<i>Trane Adaptive Frequency Drive</i>
	<i>R134a refrigerant</i>
	<i>R407C refrigerant</i>
	<i>R410A refrigerant</i>
	<i>Performance certified by Eurovent</i>
	<i>Conforms to the applicable LonMark® profiles</i>
	<i>Conforms to the BACnet® standard</i>
	<i>Conforms to the Modbus® profiles</i>



Trane® is a brand of Ingersoll Rand®. Ingersoll Rand (NYSE:IR) advances the quality of life by creating comfortable, sustainable and efficient environments. Our people and our family of brands—including Ingersoll Rand®, Trane®, Thermo King® and Club Car® — work together to enhance the quality and comfort of air in homes and buildings; transport and protect food and perishables; and increase industrial productivity and efficiency. We are a global business committed to a world of sustainable progress and enduring results.



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